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Clark University Bulletin

WORCESTER, MASSACHUSETTS 01610

General Catalog 1967/68



Additional Information

Persons interested in other information about Clark University should address the appropriate officer of administration listed below:

<i>General University Affairs:</i>	Dr. Frederick H. Jackson President
<i>General College Affairs:</i>	Dr. Robert F. Campbell Dean of the College
<i>Undergraduate Student Affairs:</i>	
<i>Men</i>	Dr. Robert W. Baker Dean of Students
<i>Women</i>	Miss M. Hazel Hughes Dean of Women
<i>Admission to the College:</i>	Mr. Richard W. Pierson Acting Director of Admissions and Financial Aid
<i>Financial Aid:</i>	Mr. Richard W. Pierson Acting Director of Admissions and Financial Aid
<i>Graduate School Affairs:</i>	Dr. Saul B. Cohen Dean of the Graduate School
<i>Evening College Affairs:</i>	Mr. Thomas J. Dolphin Director
<i>Summer School Affairs:</i>	Mr. Thomas J. Dolphin Director
<i>Alumni Affairs:</i>	Mr. Thomas M. Dolan Alumni Secretary
<i>Records and Transcripts:</i>	Mr. Gerard T. Corcoran Registrar
<i>University Address:</i>	950 Main Street Worcester, Massachusetts 01610
<i>University Telephone:</i>	Area Code 617 Telephone: 793-7711

Clark University reserves the right to amend any administrative policy described in this Catalog without prior notice to persons who might thereby be affected. Information about expenses, fees and other charges applies to the academic year, 1967-68.

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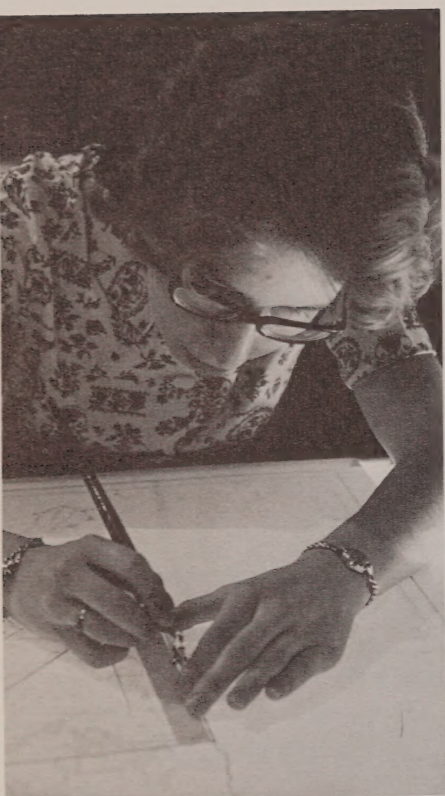
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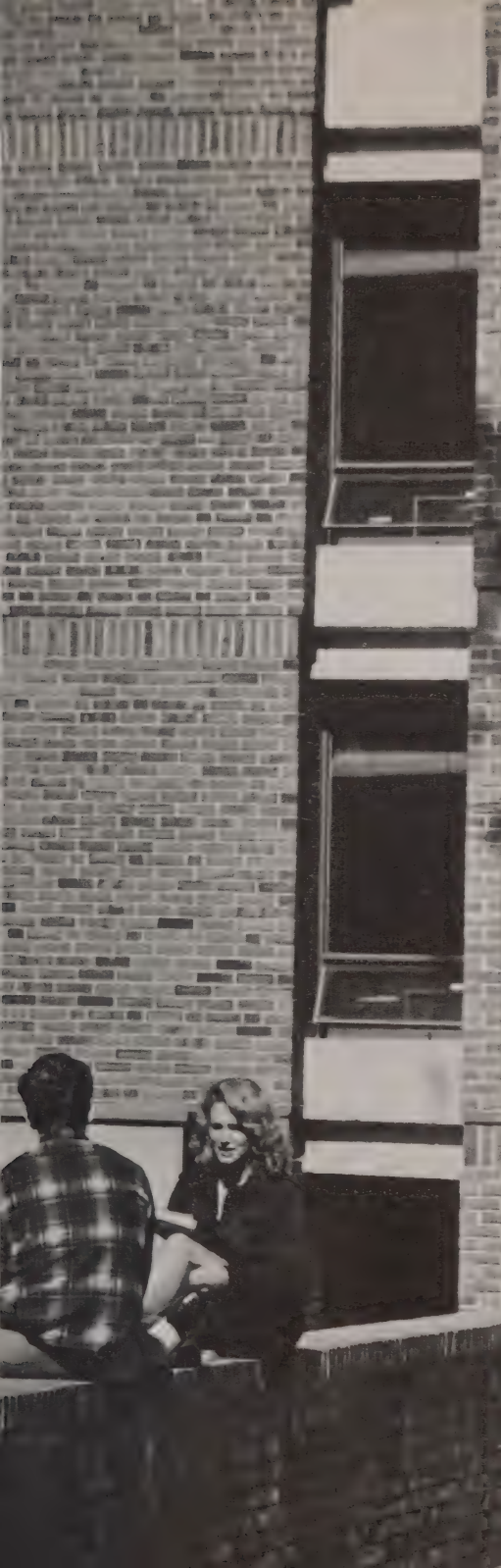
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THE UNIVERSITY

General Information

<i>Corporate Name:</i>	Trustees of Clark University
<i>President:</i>	Dr. Frederick H. Jackson
<i>Incorporation:</i>	1887
<i>Function:</i>	Independent university of liberal arts and business administration for men and women
<i>Degrees Conferred:</i>	Bachelor of Arts Bachelor of Fine Arts Bachelor of Science in Business Administration Bachelor of Science in General Studies Master of Arts Master of Arts in Education Master of Business Administration Doctor of Education Doctor of Philosophy
<i>Enrollment:</i>	1535
<i>Faculty:</i>	109
<i>Endowment,</i>	Book Value: \$9,784,583
<i>December 31, 1966:</i>	Market Value: \$13,235,510
<i>Library:</i>	265,000 volumes 50,000 maps and charts



The University Today

Clark University is a small urban, independent, co-educational university of liberal arts and business administration, founded in 1887. With a current enrollment of 1182 undergraduates—699 men and 483 women—and 350 graduate students, the University is situated on a compact 35-acre campus in Worcester, the third largest New England urban center.

The University's activities include undergraduate programs leading to the bachelor's degree in the arts and sciences, graduate study to and beyond the doctorate, and university-level educational programs for adults. These activities are carried on by four divisions: The College, The Graduate School, The Evening College and The Summer School.

As an institution, Clark is committed to scholarly excellence and intellectual creativity, faith in the ideals of liberal undergraduate education, a concern for graduate education and the values inherent in the small university. These beliefs underlie everything the University is or does, and in combination are the essentials which give Clark a unique position among the more than 2,000 colleges and universities in America.

In practice, the fact that the University has by design remained small in numbers in an age of giant universities has enabled Clark to offer its students a rare educational experience. Through a close association and partnership between the College and the Graduate School, the University effectively combines some of the best features of the small liberal arts college with the scholarly research and advanced programs of the university, to the advantage of both levels. Moreover, the student has senior scholars and faculty members for his instructors, most of whom are actively engaged in research.

This exposure is enhanced further by the close personal relationships maintained at Clark between and among faculty, undergraduates and graduate students, made possible by a low faculty to student ratio of one to fourteen, and by a small enrollment in the Graduate School.

Clark College seeks to provide its students with essential knowledge and understanding through concentration in one of nineteen fields of study and the selection of a variety of courses in related or other disciplines. In the Graduate School, the Master's degree is offered in fifteen areas, and doctoral programs are available in twelve fields. A student can receive instruction leading to the Doctor of Philosophy degree in biology, chemistry, chemical physics, economics, geography, history, international relations, mathematics, physics, and psychology. A Doctor of Education degree also is offered. Master's degrees can be obtained in these fields and also in business administration, English, government, and soci-



Dr. Frederick H. Jackson
President of the University

ology. The undergraduate may take courses in these fields, except business administration, and, in addition, in classics, comparative literature, fine arts, German, linguistics, music, philosophy, Romance languages, and Russian.

For the superior undergraduate, there are many opportunities to observe and even participate in research. Some departments have regular programs through which outstanding undergraduates take advanced courses and participate actively in the research of the department.

For undergraduates, the College offers on an optional basis a three-week January Study Period during which students have an opportunity to enroll in a number of special projects, many of which involve independent work with a minimum of faculty guidance. Several foreign study trips are also available during this period.

The University's insistence on high academic achievement, together with its unique interrelationships between the undergraduate and graduate programs, accounts in large measure for the fact that over fifty percent of the graduates of Clark College continue their education at graduate or professional schools. It accounts, too, for the fact that a large number of Clark's graduates have earned Woodrow Wilson Fellowships, Fulbright grants and other national awards for graduate study.

Most important, these accomplishments are significant reflections of the scholarly teaching and productive research of the Clark faculty. Over eighty per cent of its members hold the Ph.D. degree, a ratio which is among the highest in the nation. In the past few years, the faculty has published over 300 scholarly articles and has written a number of books.



In addition to its excellent academic programs, Clark University offers its students abundant opportunities for rewarding experiences in broad programs of co-curricular and athletic activities—both organized and informal—as well as in cultural activities of high quality both at the campus and within the Worcester community.

Admission to Clark is highly competitive, and is based on firm standards which assume that all applicants for admission to the University have demonstrated a capacity and a concern for learning. Student tuition and other charges for 1967-68 are approximately \$3,000, including \$1,900 for tuition and about \$1,100 for room and board. Nearly one-half of the students receive financial aid in the form of scholarships, grants, loans or part-time employment.

The University's History

Clark University was founded in 1887 chiefly through the efforts of two men, Jonas Gilman Clark, a sagacious merchant and businessman for whom the University is named, and Dr. Granville Stanley Hall, an educator of breadth and wisdom. Reversing the pattern at most colleges and universities in the United States, Clark was founded as a graduate institution. Undergraduate liberal arts education was established 15 years later in 1902.

Mr. Clark, a native of Worcester environs, amassed wealth during the California Gold Rush by supplying miners and others with manufactured goods. He increased his personal fortune through prudent business transactions initiated after his return to the East at the end of the Civil War. He later settled in Worcester where he became interested in civic affairs. It was during this period of his life that he decided to endow a new institution of higher learning. His last years were largely devoted to this philanthropic endeavor, with the assistance of his wife, Susan, and a group of prominent Worcester citizens, including



George F. Hoar, a United States Senator from Massachusetts, and General Charles Devens.

In 1887, the Trustees of Clark University were incorporated. Dr. Hall was appointed the first president of the University. He had been a professor of philosophy, psychology and education at The Johns Hopkins University, where he had established his reputation as a vigorous and original scholar.

Recognizing the need for graduate institutions in the United States (there was at that time only one titled graduate school in the United States—The Johns Hopkins University), President Hall began the organization of an educational institution which would be solely concerned with graduate study and research. As a result, Clark University became the second graduate school established in the United States. This unusual educational idea attracted the attention of a number of brilliant and original scholars, who, upon President Hall's urging, joined the Clark faculty. They constituted one of the most outstanding communities of scholars the country had then known.

The first students entered the University in 1889 and its first two graduates received doctorates in 1891. By 1900, when Clark University became one of the 14 charter members of the Association of American Universities, the brilliance of both teachers and students had established the scholarly reputation of the University.

While Mr. Clark supported President Hall's concept of graduate education, he also was interested in an undergraduate college for men, particularly men who possessed limited financial resources. Accordingly, a codicil to his will, effective upon his death in 1900, provided for the establishment of an undergraduate college. In compliance with the codicil, the Trustees established Clark College in 1902, with an administration and faculty distinct from those of the graduate school. Carroll Davidson Wright, then serving as the first United States Commissioner of Labor, was selected as the first president of the College.

Clark College, from its beginning, had an educational philosophy which was marked by seriousness of purpose and hard work. Inasmuch as the bachelor's degree was granted after three years of study, as opposed to the more common four-year curriculum of the day, the student carried a heavy program of study. There were intramural contests rather than intercollegiate sports; extracurricular activities were at a minimum. Though entrance requirements were informal, a high standard of academic achievement was necessary to remain in College.

President Wright died in 1909. He was succeeded by Edmund Clark Sanford, a professor of psychology in the graduate school. When President Hall resigned in 1920, President Sanford felt the time was advantageous to unite the undergraduate college and graduate school. He resigned from the presidency of the College to return to teaching and scholarship, leaving the possibility open for the reorgan-

ization of the two entities under a single president. The Trustees endorsed the reorganizational plan, and began a search for a president to lead the University.

In 1920, Wallace Walter Atwood, a professor of physiography at Harvard University, was appointed by the Trustees as president. During his tenure, there were significant changes in both the educational program and physical plant. The three-year curriculum leading to the bachelor of arts degree was increased to four years. The Graduate School of Geography was founded in 1920. Participation in intercollegiate activities, including athletics, was encouraged. Additions to the physical plant included a men's dormitory, an athletic field, a gymnasium, a library tower and an auditorium. The latter was named Atwood Hall in honor of the president. In 1941, a Division of Business Administration was established, and Clark became a co-educational institution when the Trustees voted to create the Women's College of the University.

President Atwood retired in 1946. He was succeeded by Dr. Howard Bonar Jefferson, professor of philosophy and Director of the School of Philosophy and Religion at Colgate University. Under Dr. Jefferson's leadership, the University continued to develop and be enriched. In 1953, a chapter of Phi Beta Kappa, the national liberal arts honor society, was established. In that same year, the Evening College of Clark University was organized as an institution for adult learning. In 1958, the Institute of Human Development was established as an adjunct of the Department of Psychology. A center of psychological study, its purpose is to develop an all-inclusive concept of human development. In 1964, the center was renamed the Heinz Werner Institute of Developmental Psychology in honor of the late Dr. Heinz Werner, G. Stanley Hall Professor of Genetic Psychology, Emeritus, who served as chairman and as a director of the Institute until his death.

The University's physical plant doubled during Dr. Jefferson's tenure. A new chemistry laboratory (Jeppson Laboratory) was opened in 1958. In the following year, two new dormitories (Bullock Hall and Wright Hall) and a student center (Jefferson Hall) were opened. The student center was named in honor of Dr. Jefferson. In 1964, a modern residential center (Johnson Hall for Women, Sanford Hall for Men and Little Student Commons) was opened to provide facilities for 296 students. A second, three-unit residential center, the Dana Residence Center, opened in September, 1967. A new University library, named for Robert Hutchings Goddard, is scheduled to be in use in September, 1968.

The University's academic programs also were greatly broadened and strengthened during Dr. Jefferson's tenure as president. Doctoral programs in chemical-physics and education were inaugurated in 1961 and 1962, respectively. A doctoral program in biology was re-established in 1962. Geology became an undergraduate major in 1963, and music in 1964. In 1965, a doctoral program in



mathematics was established, and a three-week January study period for undergraduates was announced. In 1966, a doctoral program in physics was re-established and a master's program in English was inaugurated. In the same year, the undergraduate major leading to the Bachelor of Science in Business Administration degree was discontinued in favor of the traditional liberal arts major in economics, and the Bachelor of Fine Arts degree was established in the Evening College.

Dr. Jefferson retired on June 30, 1967 after 21 years as president. He has been succeeded by Dr. Frederick Herbert Jackson, former Vice President for Humanities and Social Sciences at New York University.



WORCESTER CENTRAL RENEWAL PROJECT

The University's Community

Worcester, a city of 185,000 people, is located among rolling hills in central Massachusetts. It is within easy driving distance of the region's other major cities and New England's rich resource of recreational, cultural and historical places of interest.

While internationally recognized as a city of diversified industry, Worcester is equally distinguished as a rapidly emerging educational center and for its wide range of cultural activities. Eight schools of higher learning, with more than 10,000 students enrolled, are located in or near the city, including Clark, Anna Maria College, Assumption College, Becker Junior College, the College of the Holy Cross, Leicester Junior College, Quinsigamond Community College, Worcester Junior College, Worcester Polytechnic Institute and Worcester State College. In addition, nearby is the world-famous Worcester Foundation for Experimental Biology, The American Antiquarian Society and the site for the University of Massachusetts Medical School, scheduled to open in 1970.

Individually and cooperatively Worcester's colleges annually sponsor broad programs of cultural activities. Among other major cultural attractions in Worcester are the world-renown Worcester Art Museum; the Higgins Armory Museum; Worcester Historical Society and the Worcester Public Library. Also, the Worcester Music Festival presents, as it has for more than a century, an annual series of concerts by the world's great performers. Some of the other outstanding events held throughout the year include theatrical productions, symphonic concerts, light operas, folk festivals and lecture series.

Keenly aware of the challenges of the future urban center, Worcester has launched an extensive redevelopment program to modernize both residential and commercial areas of the Central Business District. Foremost among these projects is a massive \$50 million renewal program, started in 1967.

The University Campus

UNIVERSITY CAMPUS

Clark University is an urban institution, located two miles from Worcester's business center. The University's 25 major buildings are situated on a compact, 35-acre campus across from a large city park. Nearby the campus is the University's athletic field. In addition, the University owns a tract of 20 acres, known as the Hadwen Arboretum, a few miles from the campus.

CLARK HALL

The first building erected on the campus was Jonas G. Clark Hall, a four-story granite and brick structure. Built in 1887, it houses the offices of the Evening College, the Summer School, the Placement Office, and many of the offices and classrooms of the departments of instruction. It also contains the Women's Gymnasium, the Language Laboratory and the offices of the Heinz Werner Institute of Developmental Psychology.

SCIENCE BUILDING

Clark's second oldest building is the Science Building, built also in 1887. It was the site of the experimentation and research by Dr. Robert H. Goddard, "Father of the Space Age," and Dr. Albert A. Michelson, America's first Nobel Prize winner. One wing of the building and a portion of its mid-section has been remodeled to provide new research and instruction facilities for the Biology and Physics Departments.

JEPPSON LABORATORY

Jeppson Laboratory, completed in 1958, has completely modern research and instruction facilities for the Chemistry Department. It houses Johnson Hall, a multipurpose lecture hall seating 174 persons, and Kraus Library, a specialized collection of chemical periodicals.



UNIVERSITY
LIBRARY

The University Library houses more than 265,000 volumes and one of the most extensive geographical map and chart collections in the United States. A new University Library, to be named for Dr. Robert Hutchings Goddard, is scheduled for completion in September, 1968.

LIBRARY
TOWER

Attached to the north end of the University Library is the Library Tower, built in 1939 to provide space for the growing library collection. An elevator offers access to eight levels of stacks in the tower.

ATWOOD
HALL

The lower portion of the Tower contains the stage of Atwood Hall, an 800-seat auditorium used for student assemblies, lectures, concerts and other University functions. Atwood Hall also contains the Blue Room for smaller lectures and meetings, and the offices and classrooms of the Fine Arts Department.

GEOGRAPHY
BUILDING

Site of America's first Graduate School of Geography, the Geography Building also houses the offices of the President, Executive Vice President and other administrative officers, and the Geology Department. It also quarters the editorial offices of *Economic Geography*, a quarterly publication of Clark University.

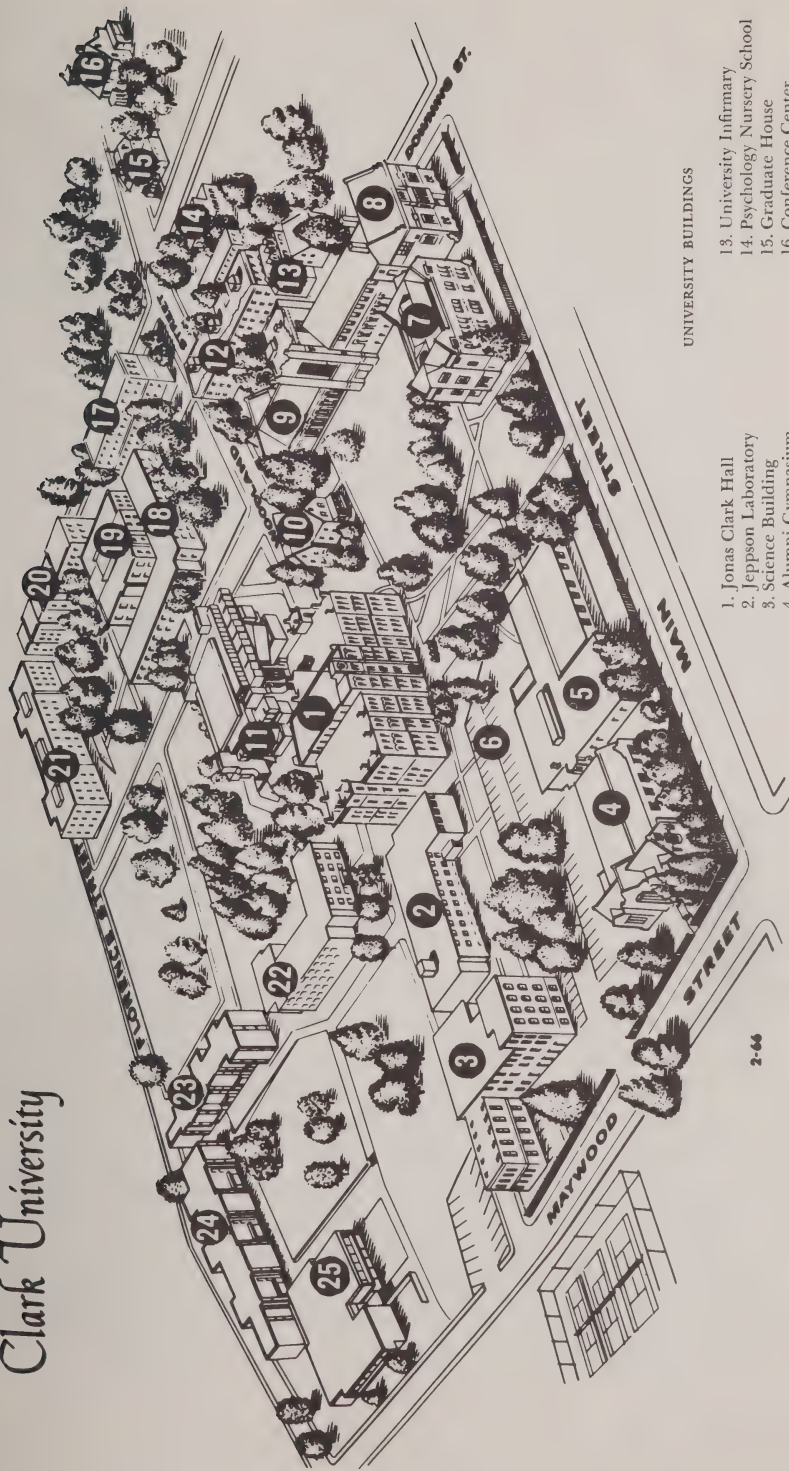
ESTABROOK
HALL

The Departments of German, Music, Mathematics and Russian, and the University Computer Center, are located in recently remodeled facilities in Estabrook Hall, which originally served as a residence and dining hall center.

CHARLES A. DANA RESIDENCE CENTER



Clark University



UNIVERSITY BUILDINGS

- | | |
|--|-------------------------------|
| 1. Jonas Clark Hall | 13. University Infirmary |
| 2. Jeppson Laboratory | 14. Psychology Nursery School |
| 3. Science Building | 15. Graduate House |
| 4. Alumni Gymnasium | 16. Conference Center |
| 5. Jefferson Hall | 17. Estabrook Hall |
| 6. Visitors Parking | 18. Wright Hall |
| 7. Geography Building | 19. Little Student Commons† |
| 8. The Library | 20. Sanford Hall† |
| 9. Atwood Hall | 21. Johnson Hall† |
| 10. Blakeslee House | 22. Bullock Hall |
| 11. The Robert Hutchings Goddard Library (to be completed in 1968) | 23. New Women's Dormitory* |
| 12. Downing Administration Center | 24. New Men's Dormitory* |
| | 25. New Student Commons* |

*Completed in September, 1967, as part of the Dana Residence Center

†Comprise Downing Residence Center

ALUMNI GYMNASIUM	Alumni Gymnasium provides a gymnasium seating 800 persons, shower and locker facilities for intramural and intercollegiate athletics, and the offices of the Department of Physical Education. On the second floor is the Alumni Office and Alumni Lounge, a comfortable meeting room for University organizations.
WRIGHT HALL	More than 200 men students are quartered in Wright Hall. Completed in 1959, this dormitory has both double and single student rooms, and lounge, study and recreation facilities.
BULLOCK HALL	Bullock Hall, a women's dormitory, also completed in 1959, is similar in design to Wright Hall. It houses 137 women students and has lounges and recreation rooms.
DOWNING RESIDENCE CENTER	In the fall of 1964 the University opened a new three-building complex for residential students. The first major addition to the campus under Clark's ten-year development program, the facilities include Johnson Hall, a dormitory for 150 women, Sanford Hall, which houses 146 men, and the Homer P. Little Student Commons building, which contains dining facilities, lounges, and meeting and recreation rooms.
DANA RESIDENCE CENTER	A second residence complex, named in honor of Mr. Charles A. Dana of Bridgeport, Conn., opened in September, 1967. The center includes a dormitory for 150 women, a dormitory for 146 men and a student center, with dining facilities and offices for student organizations.
JEFFERSON HALL	Clark's first student center—Jefferson Hall—was opened in 1959. It houses one of the University's dining halls, a snack bar, faculty and student lounges, a recreation room, and the University Bookstore.
ADMINISTRATIVE BUILDING	The University Apartments on Downing Street were converted in the summer of 1965 into the main administrative building to house the offices of Admissions, the Deans, Registrar, Bursar, Treasurer, Business and Public Relations. The Philosophy Department also is located in this building.
CONFERENCE CENTER	Near the main campus is the Conference Center, originally the site of the Institute of Liberal Studies for Executives, but now used for university meetings and functions.
GRADUATE HOUSE	The University purchased a large private home in 1961 and converted it into a Graduate House. It contains living quarters for graduate students as well as a comfortable lounge and kitchen facilities.



The University Library

Tilton M. Barron, *Librarian*

Marion Henderson, *Reference Librarian*

Elizabeth Hassinger, *Catalog Librarian*

Betty H. Leonard, *Circulation Librarian*

The Clark University Library contains over 265,000 volumes and some 50,000 maps and charts. The major part of the collection is centrally housed, and an open shelf system fosters free access to books and periodicals. Chemistry periodicals are available for reference at the Kraus Library in Jeppson Laboratory.

The collection reflects the history and growth of the University. The combined scholar's library of the early graduate school and the undergraduate library of Clark College have been developed through the years to serve the academic needs of the University. The richest holdings are in the fields in which graduate work has been offered for some years—biology, chemistry, economics, education, geography, government, history, international relations, mathematics, physics, psychology, and sociology. More characteristically undergraduate in content are the collections dealing with music, fine arts, language, literature, religion, and philosophy. The Library pays particular attention to major bibliographical and reference tools, and currently receives over 1,100 periodicals.

A music library of recordings contains a collection of classical and standard musical works. There is a listening room in the building.

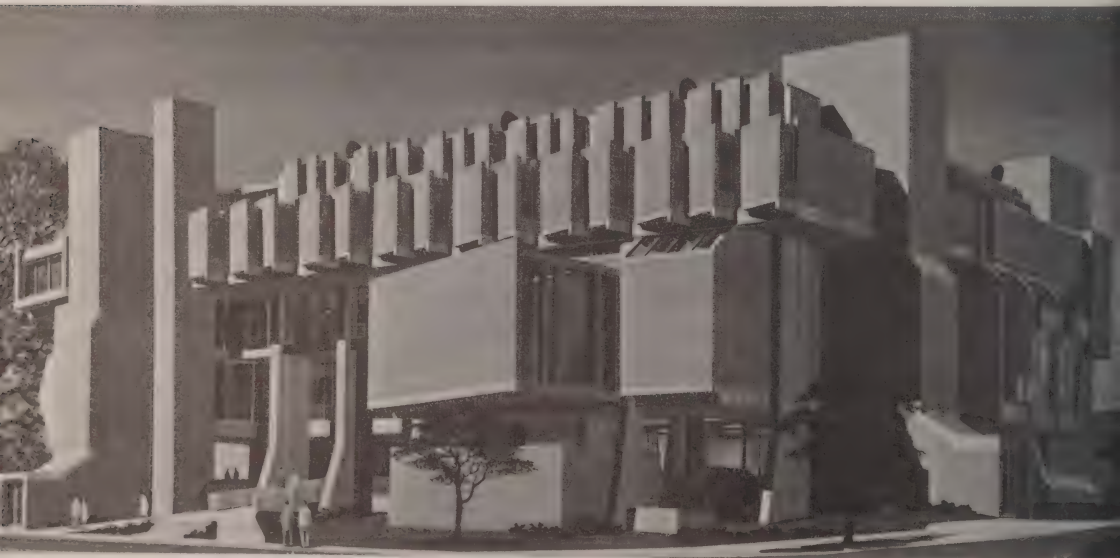
The Clark University Library coordinates its acquisition of new material and exchanges material with other libraries in the Worcester area.

Construction is currently underway for a new library to house 600,000 volumes and to accommodate 1,100 readers. The new library, to be opened in September, 1968, will be named the Robert Hutchings Goddard Library, in honor of, and as an international tribute to, Dr. Goddard, Father of the Space Age, distinguished alumnus, and professor of physics at Clark from 1914 to 1942.

The University's Future

At a time when higher education is confronted with unprecedented challenges in meeting the nation's needs, Clark University faces the future with comprehensive, thoughtful plans and an ambitious program for their achievement. In establishing ten-year objectives for the University, trustees, faculty, alumni and friends have been aware both of Clark's unusual history and traditions, and the critical national need for expanded educational services and facilities. Reflecting these considerations, Clark's goal is to hold steadfast to its traditions as a university concerned with scholarship of the highest possible order, and offering graduate work to and beyond the doctorate in selected fields of study. Too, the University aims to preserve—and enhance—the unusually close relationship which exists between undergraduate and graduate education at Clark, thus maintaining one of its most unique features: an intellectual atmosphere which combines the spirit of creative discovery found in the large university with the intimate, personal relationships which are found in the small liberal arts college. Finally, while continuing to foster the values of smallness in every possible way, the University is undertaking planned and limited expansion to an enrollment of 1800 students by 1972, the 85th anniversary of the granting of its charter.

THE ROBERT HUTCHINGS GODDARD LIBRARY





MASTER PLAN—CLARK'S CAMPUS OF TOMORROW

In pursuit of these goals, the trustees have established THE CLARK PROGRAM, a comprehensive, ten-year development effort whose objective is to secure nearly \$21 million in new resources by 1972. Of the total sought, \$8 million will be required to support endowed professorships, faculty salaries, scholarships and special programs to enrich the educational experience at Clark. The remaining \$12.8 million will be applied toward the realization of Clark's *Campus of Tomorrow*, a long range plan for campus development.

Since the commencement of THE CLARK PROGRAM in May, 1962, rapid progress has been made toward its goals. At the end of five years more than \$13 million in resources had been secured, and the University had been strengthened by an additional endowed chair, two handsome \$2.5 million residential centers, a new central heating plant, and a number of other significant additions to its physical and financial resources.

The CLARK PROGRAM project currently under way is the creation of the Robert Hutchings Goddard Library. This facility, which is to be the international academic memorial to the Father of the Space Age, will be located at the center of the University's developing campus. To be completed in 1968, the \$5 million structure will include a memorial area housing the priceless scientific and personal papers of the former Clark alumnus, faculty member and rocket pioneer. The Goddard Library will also be the site of a national memorial sculpture to be commissioned by the National Aeronautics and Space Administration under authority of legislation passed by the 89th Congress and signed

into law by President Lyndon B. Johnson in November, 1965.

THE CLARK PROGRAM is the largest undertaking of its kind in the University's history—a program rooted in conviction about the importance of what higher education means at Clark, and pursued with confidence that success will be achieved.

BEQUESTS AND
DEFERRED GIFTS
TO THE
UNIVERSITY

Bequests have always been, and will continue to be, an extremely important means of ensuring the continued growth and strengthening of independent educational institutions such as Clark University. For persons who wish to provide for the University in their estate plans, the following basic legal forms are presented with the suggestion that they be reviewed by an individual's legal counsel. Other forms are available upon request to the Office of the President.

Unrestricted Bequest

"I give and bequeath to Trustees of Clark University, a Massachusetts charitable corporation, located in Worcester, Massachusetts (here insert the amount of money and/or describe the personal property or real estate)."

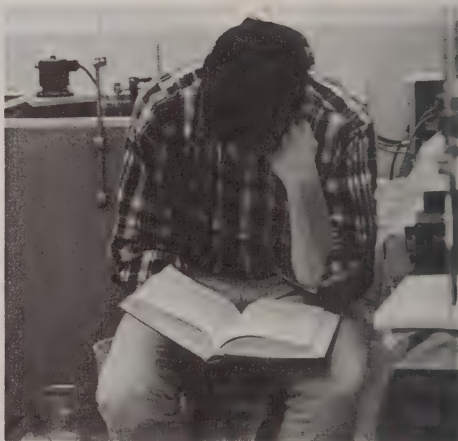
Restricted Bequest

"I give, devise and bequeath to Trustees of Clark University, a Massachusetts charitable corporation, located in Worcester, Massachusetts (here describe the gift to be used or the income to be used) for the following purposes (here specify the purposes for which the gift or the income therefrom is to be used).

In addition to legacies, there are other methods of providing for the University in estate plans. Gift Annuities, Life Income Plans, and Trusts are available at Clark through its Deferred Gifts Program. Specific information may be obtained by writing to the Office of the President. The University will be glad to consult, on a strictly confidential basis, with individuals and their counselors about these other ways of enriching the University.

For purposes of making a gift by will to Clark, the University's legal corporate title is: TRUSTEES OF CLARK UNIVERSITY.





THE UNDERGRADUATE COLLEGES



The Colleges

CLARK COLLEGE

Clark College (the undergraduate men's division) and the Women's College constitute the primary undergraduate divisions of the University. Educationally they operate as a unit, and admission and degree requirements are identical in the two colleges. Both offer academic programs in the liberal arts.

LIBERAL ARTS

The liberal arts program provides for breadth of knowledge and understanding together with the intellectual discipline resulting from concentration in a selected field of special interest. The program, leading to the degree of Bachelor of Arts, possesses a large degree of flexibility permitting adaptation to a wide variety of individual interests. A statement of the principles of liberal education upon which the program is based appears on page 39.

Admission

FRESHMAN ADMISSION

Clark University welcomes applications for admission from men and women whose backgrounds show them to be prepared to join in the life of an intellectual community.

Selection is on a competitive basis with particular emphasis upon scholastic achievement. Applications are subject to final approval by the Admissions Committee, comprised of members of the faculty and the admissions officers.

APPLICATIONS

Candidates for admission are encouraged to submit their applications as early as possible during the first semester of their final year of secondary school education. All applications must be received by *March 1*. An application fee of ten dollars, non-refundable, must accompany each application.

ENTRANCE REQUIREMENTS

General: The completion of a four-year high school program or its equivalent, including a minimum of 16 acceptable units of credit, is required for admission to the freshman class. (The term "unit" means a course of study in one subject taken through a school year.) Official records from all secondary schools attended must be submitted.

Subject-Matter Requirements: For admission to the freshman class the subject-matter requirements are as follows:

Required Subjects, 8 units

English	4 units
Mathematics (algebra and geometry) (Applicants planning to specialize in science or mathematics are advised to present three or more units of mathematics.)	2 units
Foreign Language (in a single language)	2 units

Restricted Electives, 5 or more units

Social Studies (history, government, civics, etc.)	1 to 4 units
Natural Sciences (biology, chemistry, physics, etc.)	1 to 4 units
Mathematics	1 to 2 units
Foreign Language (A single unit in a beginning foreign language is not acceptable.)	1 to 4 units

Free Electives, not more than 4 units

Subjects recognized by the applicant's secondary school in its regular program, at the discretion of the Admissions Committee.

Entrance Examination Requirements: All applicants must arrange during their senior year to take and submit the results of the Scholastic Aptitude Test, as administered by the College Entrance Examination Board, prior to final consideration by the Admissions Committee. The December administration of this test is preferred.

To assist the College in determining proper placement in courses, applicants are required to submit the results of three Achievement Tests of the College Entrance Examination Board. The senior year English Composition Achievement is required of all applicants. Unless a student is taking a foreign language during the final year of secondary education and plans to continue it upon entrance to Clark—in which case the Achievement in that language must be submitted—the remaining two tests are his free choice.

Senior year Achievement Tests are preferred. However, Achievements taken at the end of a terminal course of study will be accepted.

Further information concerning these testing programs may be obtained from the applicant's secondary school guidance counselor, or from the College Entrance Examination Board. The College Entrance Examination Board may be addressed in the East at Post Office Box 592, Princeton, New Jersey; in the Far West at Post Office Box 9896, Los Feliz Station, Los Angeles 27, California.

Campus Interview: Interviews are available to all students who wish to investigate the prospect of attending Clark University, regardless of whether formal application has been made or not. It is strongly recommended that all candidates for admission have an on campus interview, if possible.

The Admissions Office, located on the first floor of the Administration Building, is open Monday through Friday, 9:00 a.m. until 5:00 p.m., throughout the year, excluding national holidays, and on Saturday between 9:00 a.m. and 12:00 noon, from October 1 to March 1. Arrangements for personal interviews and campus tours may be made by writing or telephoning the Admissions Office, preferably at least two weeks in advance of the desired date.

Students planning to visit the campus during the summer months also may arrange, in advance of their arrival, for personal interviews.

BASIC
FRESHMEN
EXPENSES

Basic expenses in the Freshmen year at Clark total approximately \$2982 to \$3165, as follows:

Tuition		\$1,900
Board		600
Room		\$400-575
Fees		82-90
Induction	\$20.00 for residential students 12.00 for commuting students	
Laboratory	30.00	
Activities	40.00	
		<hr/>
		\$2,982-\$3,165

A schedule of all University undergraduate charges appears on Page 55.

NOTIFICATION OF ADMISSION AND DEPOSIT Time of notification of admission to the incoming freshman class is at the discretion of the Admissions Committee, and will normally begin on or about April 1.

Upon receipt of a formal offer of admission a student will be required to indicate acceptance of the offer by making an admission deposit of \$200, non-refundable, to reserve a place within the incoming class. This deposit will be credited towards the charges for the first semester.

HOUSING ARRANGEMENTS All freshmen not living with their parents, legal guardian, spouse, or adult member of the immediate family are required to take up residence within University operated dormitory facilities. Rooms are assigned during the summer prior to the arrival of the freshman class. Inquiries concerning living arrangements should be sent to the Office of the Dean of Students (men) or the Dean of Women.

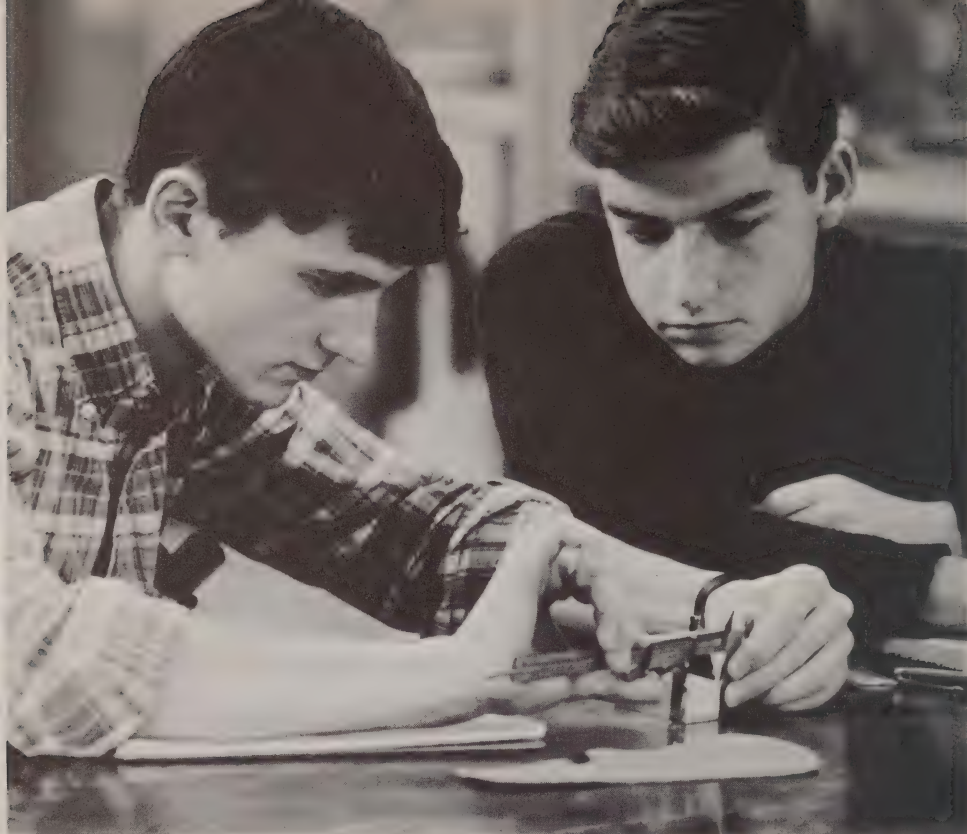
TRANSFER APPLICANTS Clark University considers a limited number of academically qualified applicants for transfer from both four-year colleges and universities, and two-year colleges.

TRANSFER REQUIREMENTS All applicants for admission under the transfer program are required to submit evidence of honorable dismissal, complete transcripts of all previous academic records, including the results of all College Entrance Examination Board tests, and such other information as the Admissions Committee may request. An on-campus interview is recommended.

TRANSFER CREDIT Credit is normally given for courses previously taken at accredited colleges or universities if these courses are comparable to those offered within the Clark University curriculum. Credit for courses previously taken at non-accredited colleges is granted only on a provisional basis to be evaluated upon successful completion of two semesters of work at Clark with a cumulative average of 1.7. No credit is given for any course completed with a grade lower than C-minus.

Evaluation of credits for college courses completed elsewhere is made at the time of a student's first registration at Clark and is used in planning his course program and in classifying him provisionally as a freshman, sophomore or junior.

A graduate of the three-year course of the School of the Worcester Art Museum may be admitted as a candidate for the



degree of Bachelor of Arts with the rank of junior in the College. In such cases the usual admission requirements must be met and the general subject-matter requirements for the degree must be satisfied.

FOREIGN STUDENTS

Clark University is favorably disposed to receive applications for admission from foreign students. However, the University is unable to provide financial aid to cover the major portion of a foreign student's educational expenses. Each foreign student accepted for admission must have medical insurance, preferably that available from the Institute of International Education.

Applications from foreign students will not be considered if received after May 1. Foreign students whose native tongue is not English must be able to satisfy the University requirements for proficiency in the English language.

SPECIAL STUDENTS AND AUDITORS

Persons who are not prospective degree candidates, who may wish to take advantage of the opportunities for study provided by the University and who give satisfactory evidence of adequate preparation for the work which they wish to undertake, may

apply for admission under the status of Special Student. Inquiries concerning this category of student should be addressed to the Office of Admissions.

At the discretion of the administrative officers of the University, Auditors, registered for attendance but not for credit, may be admitted. They are required to pay the regular tuition rates and the matriculation fee, but are not enrolled as students.

**SUMMER SCHOOL
AND EVENING
COLLEGE**

Persons who may wish to be candidates for a degree or who may wish to take advantage of the opportunities for study provided by the Summer School or The Evening College are invited to send inquiries concerning admission, programs available, or other questions to the Office of the Director of The Evening College and Summer School, Clark University.

WITHDRAWAL

The University reserves the right to require the withdrawal of a student whose academic performance or conduct fails to meet required standards.



Financial Aid

GENERAL INFORMATION

Scholarships, grants and loans are provided by the University from endowed and special funds. Other scholarships, grants and loans are available from various public and private sources.

SCHOLARSHIPS

Scholarship aid is awarded on the basis of financial need and ability. Jonas Clark Scholarships are awarded for four years contingent upon continued financial need (as evidenced by the Renewal Parents' Confidential Statement) and academic achievement. All scholarships (with the exception of freshman scholarships) are reviewed each semester for academic achievement. Upperclassmen with satisfactory academic records may apply for financial aid at the beginning of any semester. To do so, they must submit the Renewal Parents' Confidential Statement, which may be obtained from the Financial Aid Office of the University. Transfer students may apply for financial aid for their first semester of residence.

Incoming freshmen applying for financial assistance do so through the College Scholarship Service, Box 176, Princeton, New Jersey or, for the Far West, Box 27896, Los Angeles 27, California. The service provides the University with an independent analysis of the applicant's financial needs. The application (Parents' Confidential Statement) may be obtained at the student's secondary school or from the College Scholarship Service and should be submitted to the College Scholarship Service at the same time that the student applies for admission. In order to receive financial aid consideration at Clark the Parents' Confidential Statement must be submitted prior to *February 1*. No other financial aid application is necessary. Qualified students are notified about financial aid awards shortly after they receive the decision of their admission.

Upperclassmen must reapply annually for financial aid by submitting the Renewal Parents' Confidential Statement, which may be obtained from the Financial Aid Office of the University.

GRANTS

The Federal Educational Opportunity Grants are part of a new Federal program of assistance to college students. They are grants, not loans, and are renewable on a yearly basis. The grants are specifically set aside for students from low income families.

LOANS Students who find it necessary to borrow money to continue their education may do so through various sources:

The National Defense Act Student Loan Program provides funds for long-term loans which bear no interest until a student has completed full-time study. Normally a person borrowing from these funds will repay the amount over a ten-year period. Graduates who enter public or private school teaching at the elementary or secondary level are eligible to have up to 50 per cent of their loan excused if they remain in teaching for a five-year period. National Defense Student Loans are granted on the basis of financial need and available funds. All National Defense Loan commitments are made contingent on Congressional appropriation of funds annually for this program.

Guaranteed Loan Program: Under Title IV of the Higher Education Act of 1965, a new loan program aimed primarily at middle income families has been created. Undergraduates may borrow up to \$1,000 yearly; graduate students up to \$1,500. Students whose families have adjusted incomes of \$15,000 or under will have a portion of the interest paid by the Government. Since the program is not completely operative in all states at this time, it would be advisable for students interested in this program to contact their local banks.

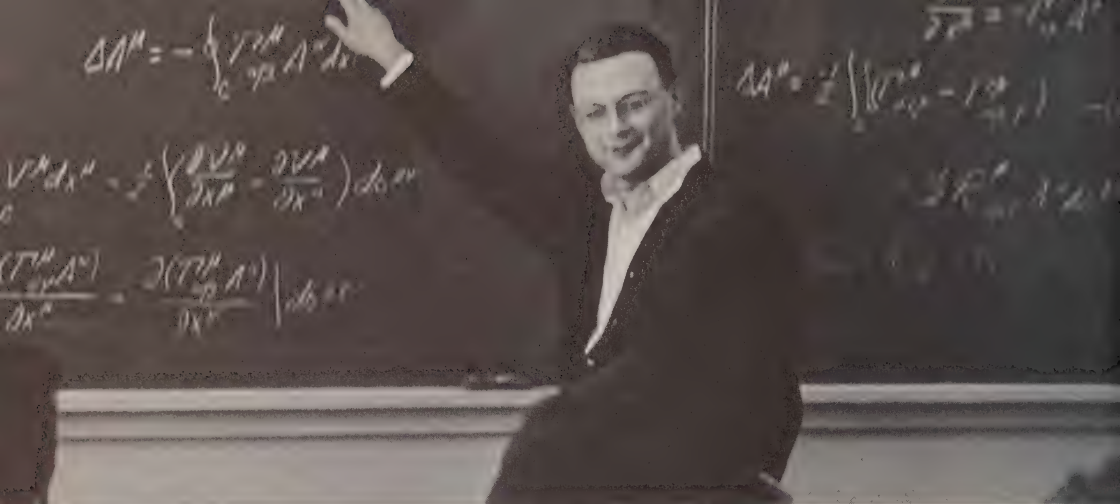
Clark Loans: Clark maintains low interest, short-term, loan funds with interest and repayment commencing after graduation. These loans are available only to upperclassmen.

Other Loan Programs: Commercial deferred or extended payment plans such as various State Loan Programs, and private tuition payment plans also are available and should be carefully considered by the applicant.

PART-TIME A limited amount of part-time employment is available in vari-
EMPLOYMENT ous offices and departments of the University, and in the Worces-
ter community.

WORK-STUDY The University actively participates in the College Work-Study
PROGRAM Program (Title I, Part C) under the Economic Opportunity Act
of 1964. Qualified students from low-income families may obtain
further information about this program from the Financial Aid
Office of the University.

Further details on all forms of Financial Aid at the University may be obtained by writing to the Financial Aid Officer in care of the Admissions Office.



AUTOMOBILES

Students receiving financial aid are expected not to maintain or operate motor vehicles while in attendance at the College.

SCHOLARSHIP FUNDS

The following scholarships are currently available from University funds:

The Reginald Bryant Allen Fund: The income from this fund is to be awarded annually to a deserving student majoring in mathematics.

The Alumni Group Scholarship: A scholarship to an accredited freshman is awarded from a fund established by the trustees and the first three classes to graduate from Clark College, '05, '06 and '07.

The Worcester Art Museum Scholarships: Scholarships are available to Clark students who are enrolled in the affiliated School of the Worcester Art Museum as Fine Arts majors.

The B'nai B'rith Scholarship: The Worcester Chapter, Order of B'nai B'rith, provides a scholarship primarily but not exclusively for the aid of Jewish students.

The Gertrude and William Brodie Award: Established in 1966 by a bequest of William Brodie, '25, the income from this fund is awarded each year to assist a deserving Clark undergraduate.

The Charles W. and Annie L. Bruninghaus Fund: The income from this fund, established in 1957, provides scholarship aid to undergraduates.

The Charles T. Bumer Memorial Scholarships: Up to four full tuition scholarships, one of which includes tuition, room and board, are awarded annually to entering freshmen. These scholarships are granted to outstanding freshman applicants and are

named in honor of the late Dr. Bumer, a professor of mathematics at Clark from 1948 to 1960 and chairman of that department.

The Jonas G. Clark Scholarships: These scholarships have been established by the trustees to provide financial aid for undergraduate students.

The Clark University Faculty Women's Club Scholarships: These scholarships are available to undergraduate students, either men or women, who rank high in intellectual and personal qualities.

The Albert C. Erickson Scholarship: Established by the Tupper Foundation to honor an outstanding Clark student and teacher whose death in 1936 terminated a brilliant career in mathematical physics, this scholarship is awarded annually to an undergraduate, normally near the end of his junior year, who has done outstanding work in physics and mathematics and who shows unusual promise in these fields.

The A. D. R. Fraser Scholarship: Established in 1964 by the Directors of the Herbert T. Dyett Foundation of Rome, New York in honor of Mr. A. D. R. Fraser '22, a trustee of the University, this scholarship is awarded to a deserving student at Clark from the city of Rome, New York, or lacking a qualified candidate from Rome, from Oneida County, New York.

The Aaron Fuchs Memorial Scholarship Fund: Given by Mrs. Celia Fuchs in memory of her husband and in honor of her sons, Lawrence, '44, and Jerome, '53, this fund provides scholarship aid for non-residents of Worcester or Worcester County.

The Bertram L. and Bessie T. Handleman Fund: Established by Chester Handleman, A.B. '41, A.M. '61, in honor of his parents, this fund provides scholarship assistance within the Department of History, Government and International Relations and/or funds for the general purposes of the Department as determined by the Dean of the Graduate School and the Chairman of the Department.

The High School Basketball Tournament Scholarship: Receipts of the High School Basketball Tournament held annually at Clark provide assistance to male undergraduates from Worcester County.

The Gertrude & Eva Hillman Scholarship: Established in the memory of the sister and mother of Archibald M. Hillman to honor worthy students at the University.

The Ellis-Hubley Competitive Scholarships: These are competitive scholarships restricted to male residents of Worcester or neighboring towns who have graduated from secondary schools in those areas. The scholarship accords full tuition plus a stipend and is awarded annually without regard to financial need. The award is normally continued throughout the four years of College. Up to three other full tuition scholarships are awarded annually to applicants who, in the judgment of the Scholarship Committee, rank next to the successful candidate. A candidate must receive the recommendation of his secondary school principal and must also be interviewed by the Scholarship Committee.

Funds for these scholarships are awarded from the income of funds bequeathed in memory of Gordon A. Hubley, Clark '10, and of Theodore T. and Mary G. Ellis.

The Levi Knowlton Fund: A bequest of Mary H. Nixon in honor of her father, Levi Knowlton, to provide scholarship aid to undergraduates.

The Homer Payson Little Scholarship in Geology: Established in 1965 by an anonymous donor in appreciation of the development of the Department of Geology, the income from this fund provides an annual scholarship to a student majoring in Geology who has demonstrated scholarly achievement in Geology.

The Livermore and Ambulance Scholarship: The endowment for this scholarship was provided by citizens of Worcester in honor of Charles Randall Livermore, first Clark man to fall in battle in World War I, and of his companions in the Clark Unit of Ambulance Drivers. The scholarship is for male students who are residents of Worcester County.

The National Council of Jewish Women Scholarship: The Worcester section, National Council of Jewish Women, awards a scholarship each year to a Jewish student of the Women's College who resides in Worcester County.

The Alice Friend Newton Memorial Scholarship: This scholarship provides assistance for an upperclass student in the Women's College whose major is psychology.

The Abraham Persky Scholarship Fund: The income of this fund is used to assist deserving undergraduates.

Pleiades Scholarship: This scholarship is awarded annually to a member of the Women's College on the basis of active citizenship, scholarship and financial need from funds raised by Pleiades, senior women's honorary society.

The Charles B. Randolph Fund: The fund is restricted to male students, preferably those whose major is a foreign language.

The Helen Brewster Randolph Memorial Scholarship: Established by the late Professor Charles B. Randolph in memory of



his mother, the fund provides scholarships restricted to male college students.

The Jennie L. Richardson Scholarship: This scholarship was established by a bequest of Carlton E. Richardson, Clark '08, as a memorial to his mother. The income of this fund is available for female students of the Protestant faith.

The William Richardson Scholarship: This scholarship was established by a bequest of Carlton E. Richardson, Clark '08, as a memorial to his father. The income of this fund is available preferably for male students of the Protestant faith.

The Sanford Memorial Scholarship: Established by alumni in honor of Edmund C. Sanford, president of Clark College from 1909 to 1920, the fund provides an annual scholarship for a male senior undergraduate.

The Whitman Scholarship: Named in honor of Ernest R. Whitman, long-time athletic director at Clark, this scholarship offers full tuition, plus a yearly stipend if the recipient is a resident student, and is awarded to students, usually men, whose qualities of leadership in classroom and school are outstanding.

The Henry A. Willis Scholarships: Male students from Fitchburg, Mass., and vicinity have first consideration in the award of these scholarships. In the absence of suitable candidates from this community, grants may be made to others.

LOAN FUNDS

The following loan funds are currently available to undergraduates:

The Alumni Loan Fund: Established by the trustees and alumni for undergraduate assistance.

The May S. Rogers Loan Fund: The fund is available to undergraduates who need loan assistance.

The Haskell Talamo Loan Fund: The fund has been established by relatives and friends of the late Dr. Haskell Talamo, Clark '16.

The Louis N. Wilson Fund: The fund was established by the first librarian of Clark as a loan source for male students in the College.



The Academic Programs

PRINCIPLES OF LIBERAL EDUCATION

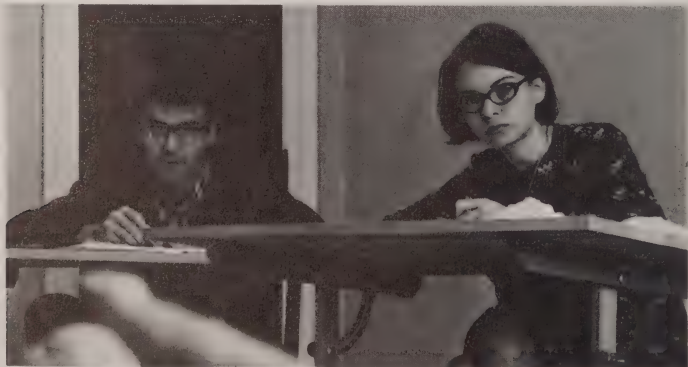
Liberal education seeks to develop human beings who have a sense of personal identity, who are equipped and motivated to realize their intellectual potentialities and who are able to contribute to their own welfare and the welfare of others. This often involves a lifetime of learning, but a liberal arts college in a university can and should make a significant contribution to the attainment of such goals.

To have a sense of identity is to understand oneself as an organism in the natural and physical world, as a product of a particular civilization or society and as a person caught up in all the joys, sorrows and perplexities of the human condition. Naturally, no course or combination of courses can insure such understanding and there is no schooling that can guarantee wis-

dom, but there are courses in almost every field which can make a genuine contribution to this personal educational goal.

Self-realization or the actualization of one's potentialities depends in the first instance on the acquisition and improvement of fundamental skills of language, reasoning and communication. Without these skills, it is not possible either to expand one's intellectual horizons or to master a particular intellectual discipline, pursued for its own sake or for extrinsic professional or vocational reasons. Mastery of one's own language should be matched by competence in at least one other language, and to understand the processes of reasoning in many disciplines a knowledge of mathematics including the calculus is essential. Intellectual development and understanding also rest to a great extent on an appreciation of the various methods by which knowledge is acquired, theories and hypotheses are tested and judgments are evaluated. To gain this appreciation, a student should take courses which involve various modes of inquiry, e.g., the historical approach, the experimental method, logical, textual or linguistic criticism, systems analysis and intuitive insight. It will be difficult for a student to take such courses without at the same time familiarizing himself with important ideas in each of the traditional divisions of knowledge, the physical sciences, the social sciences and the humanities.

Communication of ideas and feelings is surely not the monopoly of language, literature and mathematics, and, therefore, one should also be familiar with the expression of ideas and feelings in music and the fine arts. It has been argued, indeed, that the arts provide an insight into "reality" that is just as valid as that



provided by the sciences. In any event, one cannot realize one's potentialities for intellectual and aesthetic enjoyment without exploring one or more of these artistic areas.

To contribute to one's own welfare usually demands the choice of a vocation that is rewarding psychologically or financially or both. A liberal arts education does not become illiberal when it recognizes this fact and provides opportunities for intensive work in areas which may lead to vocational involvement or when it prepares students well for graduate and professional schools. But this emphasis on pre-professional training should always be balanced by courses which emphasize the interrelationships of fields of knowledge and the values which undergird the whole intellectual enterprise and indeed all of human society.

To suggest a concern for the welfare of others naturally implies some value judgments that are inherent in liberal education. It is to assert that a liberally educated person will assume some responsibility in public and community affairs, and that he will contribute certain analytical abilities, specialized knowledge and mature judgment to the solution of the problems of society. To prepare for this role, a person should be familiar with some basic concepts in the social sciences and should have had some experience in problem solving and in making hard choices among alternative courses of action.

It should be re-emphasized that liberal learning is a life-time pursuit, but a student may take a giant step toward the goals of liberal education by a judicious and wide-ranging choice of courses in college. In the atmosphere of freedom which Clark University seeks to promote, this choice is left primarily to the student, who is urged to take advantage of the many opportunities offered by the University.

GROUPS

Course credit may be obtained at the undergraduate level in the following fields of instruction which, for administrative purposes, are known as "groups."

Group A. Science and Mathematics: Biology, chemistry, experimental psychology, geology, mathematics and physics.

Group B. Social Sciences: Economics, education, geography, government, history, international relations, linguistics, philosophy, psychology and sociology.

Group C. Language and Literature: Greek, Latin, English, French, German, Spanish, Russian, and comparative literature.

Group D. Fine Arts: Art and music.

MAJORS

A student may major in biology, chemistry, classics, economics, English, geography, geology, German, government, history, international relations, mathematics, music, philosophy, physics, psychology, sociology or Romance languages. A major in fine arts is offered through a program given in cooperation by Clark and the School of the Worcester Art Museum. Courses in education are offered, but a major is not available.

GENERAL EDUCATION

Many courses at Clark offer the student an opportunity to develop an intelligent and critical interest in fields of learning where he has no expectation of attaining professional competence. In choosing his program, the undergraduate is urged to supplement his major with courses of this character.

STUDENT PROGRAMS

The undergraduate normally carries a full program of from 12 to 17 semester hours inclusive each semester. In addition, he must meet the requirement for physical education. In general, a course meets three times weekly. Laboratory periods are usually three hours long. Students should consult their faculty adviser or major department when questions of course or program selection arise. Permission to carry a reduced or expanded program must ordinarily be secured from the College Board.

JANUARY STUDY PERIOD

A three-week period immediately following the mid-year recess is set aside for special projects and independent study. During this period, the student is given the opportunity to work on a special project from a list of offerings prepared by faculty members or which is of his own choosing with the approval of a faculty member. Programs of extracurricular activities, including athletics, drama, music and lectures, continue as usual during the January Study Period.

INDUCTION

Freshmen and transfer students must attend an induction program held on the campus several days before the academic year begins. During the induction program, placement examinations and other tests are given. Students attend individual and group conferences in preparation to register for a program of studies.

FACULTY ADVISERS	<p>A freshman is assigned a faculty member who advises the student on a program of courses and on other matters. After the freshman year, students are encouraged to select an adviser of their own choosing. A change of advisers may be made on formal request addressed to the appropriate Dean.</p>
REGISTRATION	<p>Each student is required to register for a specific program of courses before every semester. The student is given notice in advance of the dates on which registration is required. Failure to register within the announced period is penalized by a late registration fee.</p>
ADVANCED PLACEMENT	<p>Placement in advanced courses is determined by individual performance on special departmental placement examinations or, in some instances, on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. College credit for certain courses completed in high school may also be granted toward the bachelor's degrees on the basis of the College Entrance Examination Board Advanced Placement Tests.</p>
UNDERGRADUATE PROGRAMS	<p>Freshmen may choose any course distinguished by the letter "F."</p> <p>Tentative selection of a major is required of A.B. degree candidates at the time of registration for the sophomore year.</p> <p>Sophomores may elect any course designated by numbers beginning with the numeral 1, indicating the course is primarily for undergraduates. They are not admitted to courses designated by numbers beginning with the numeral 2, except by permission of the instructor and the department chairman concerned, to whom the student must present evidence of high class standing and/or adequate preparation.</p> <p>Juniors and seniors should plan their courses carefully and in consultation with their faculty advisers. However, these students may elect any courses designated by numbers beginning with 1 or 2, indicating courses which are primarily for undergraduates or for advanced undergraduates and graduate students. The selection by juniors and seniors of these courses is subject to any conditions stated in the course description.</p> <p>Under special conditions and with the approval of the Chairman of College Board and the Dean of the Graduate School in each case, seniors who rank in the upper third of their class may</p>

be admitted to courses designated by numbers beginning with the numeral 3, indicating courses which are primarily for graduate students.

READINGS OR
SPECIAL
PROJECTS
COURSES

Some departments offer readings or special projects courses which may be entered with the permission of the instructor concerned. No student, however, may register for more than eight semester hours of such courses during a given semester or for more than twenty-four semester hours of such courses during his college career.

ACCELERATED
PROGRAMS

A student may earn the Bachelor's degree in less than four academic years, provided he is prepared to make the additional effort which is required and is able to maintain the required level of scholarship.

Such accelerated programs are possible through a combination of Advanced Placement credit, a larger than normal program of studies and attendance at summer schools. Credit toward a degree for study at a summer school other than the Clark Summer School must be approved by the Registrar no later than Registration Day of the following semester. Students are strongly advised to confer with the Registrar prior to taking summer school courses to assure acceptability of credit toward the Clark degree.

EXPANDED
PROGRAMS

A student whose grade point average for any semester is 2.3 or better may register for a program of more than 17 but no more than 20 semester hours for the following semester.

A senior whose graduation within the academic year depends on the completion of an expanded program during that year may register for more than 17 but no more than 20 semester hours if his grade point average for the preceding semester is 1.7 or better.

WASHINGTON
SEMESTER
PROGRAM

Clark participates in the Washington Semester program of the American University in Washington, D. C. Under the program, a small number of superior students may be nominated to attend the program, usually in the junior year, studying United States government in the nation's capital. Though any student may be interested in the program, the opportunity should be particularly attractive to students majoring in government, international relations, history, economics or sociology. A credit of 15 semester

hours is given for the program toward the Bachelor's degree at Clark. Inquiry and application should be made to the chairman of the Department of History, Government and International Relations.

**JUNIOR YEAR
ABROAD**

In cooperation with such organizations as The Experiment In International Living, The Institute of European Studies, the Jacob Hiatt Institute in Israel and several American colleges and universities, Clark offers its students the opportunity of spending all or a portion of their junior year abroad. These and other programs of foreign study involving academic credit must have prior approval of the College Board.

**PARTIAL
PROGRAMS**

Under special circumstances, students may be permitted to register for a semester program of less than 12 semester hours. Such students are designated as part-time students and are excused from the requirement in physical education.

**SPECIAL
STUDENTS**

Special students register for such programs as they agree upon in consultation with the instructors concerned. They are excused from the requirement in physical education.

**PRE-
PROFESSIONAL
PROGRAMS**

One function of the undergraduate colleges is to prepare students who intend to enter a professional school or take graduate study. Students entering Clark may gain this basic preparation through the selection of the appropriate major. A student planning a professional career should consult with his adviser as early as possible in his college career to best select an undergraduate program.

Pre-medical or pre-dental students can satisfy requirements for entrance into a medical or dental school by taking necessary basic courses in biology, chemistry and physics. Such students should consult with the Chairman of the Pre-Medical, Pre-Dental Advisory Committee. For students planning careers in teaching, Clark offers courses necessary for state certification. It also offers a graduate program in education. For information concerning teaching requirements, consult the Education Department section under the listing of "Departments and Courses."

Pre-law students are not limited to the selection of a particular major or a fixed group of studies; some attention to the social sciences is generally favored. Undergraduates planning to attend law schools are advised to seek a broad liberal arts education.

Requirements for a Bachelor's Degree

GENERAL REQUIREMENTS

Residence: Normally at least sixty semester hours of the total one hundred and twenty semester hours required for the Bachelor's degree must be taken at Clark University. Of these no fewer than thirty of the last sixty semester hours must be completed at Clark. Permission for a student to take all or part of his work during the senior year at another institution may be granted, by the College Board only, in exceptional circumstances, especially when an unusual educational opportunity is presented.

Course Requirements: All College regulations concerned with credit toward a degree are expressed in terms of semester hours. In undergraduate courses, a semester hour as a unit of credit normally implies one class meeting of approximately fifty minutes in duration or one laboratory exercise of two or three hours duration per week throughout one semester. One hundred and twenty semester hours at a satisfactory level of scholarship are required for the Bachelor's degree.

Physical Education: Two hours per week of physical education is required of freshmen and sophomores. A fee of \$50 will be charged to any student who has an *unexcused* failure in any semester in the two-year men's physical education requirement. A proportionate fee will be charged to women students who have an *unexcused* failure in any portion of the women's physical education requirements.

MAJOR REQUIREMENTS

Major: A departmental major consists of courses designated by the department for this purpose and totaling at least forty but no more than fifty semester hours. At least half but no more than three-quarters of these semester hours must be in the major subject; the remaining hours must be in related fields of study as designated by the major department. A grade point average of 2.0 or better must be attained in at least forty semester hours of courses in the major and related fields.

Mathematics 11 or 12 is a freshman year requirement for all students intending to major in Group A—Science and Mathematics.

OTHER
REQUIREMENTS

A student must take and pass courses equaling at least 36 semester hours outside the Group (A, B or C-D) in which he is majoring or alternatively (at the direction of his major department) outside those major and related fields or courses designated for this purpose by his major department and approved by the Academic Council.

Academic Regulations

GRADES

Grades are reported to each student at the end of each semester. The grades are A—excellent; B—good; C—average; D—poor; F—failure, and P—pass. The modifying symbols, plus and minus, are used with each of these letter grades, except F and P, giving 13 levels of passing grades. A report of incomplete is permitted only when sickness or some other unavoidable circumstance prevents the completion of a course.

A *grade point average* is determined for each student at the end of each semester by multiplying the credit in semester hours of each course in which the student is registered by a *grade point* or numerical equivalent of the letter grade received by the student and dividing the result by the total number of semester hours for which the student is registered. The grade points used for the calculation of averages are as follows:

A+=4.3	B+=3.3	C+=2.3	D+=1.3	F=0
A =4.0	B =3.0	C =2.0	D =1.0	
A-=3.7	B-=2.7	C-=1.7	D-=0.7	

A record of failure in a course is final and not subject to change on the basis of any subsequent performance of the student who is involved. Credit for a course in which a failure has been reported may be secured only by repeating the course and earning a passing grade.

A record of incomplete incurred in the first semester must be made up no later than the following April 1; if incurred in the second semester or summer term, it must be made up no later than the following October 15. If a course is not completed within the specified time, the record of incomplete is changed to one of technical failure.

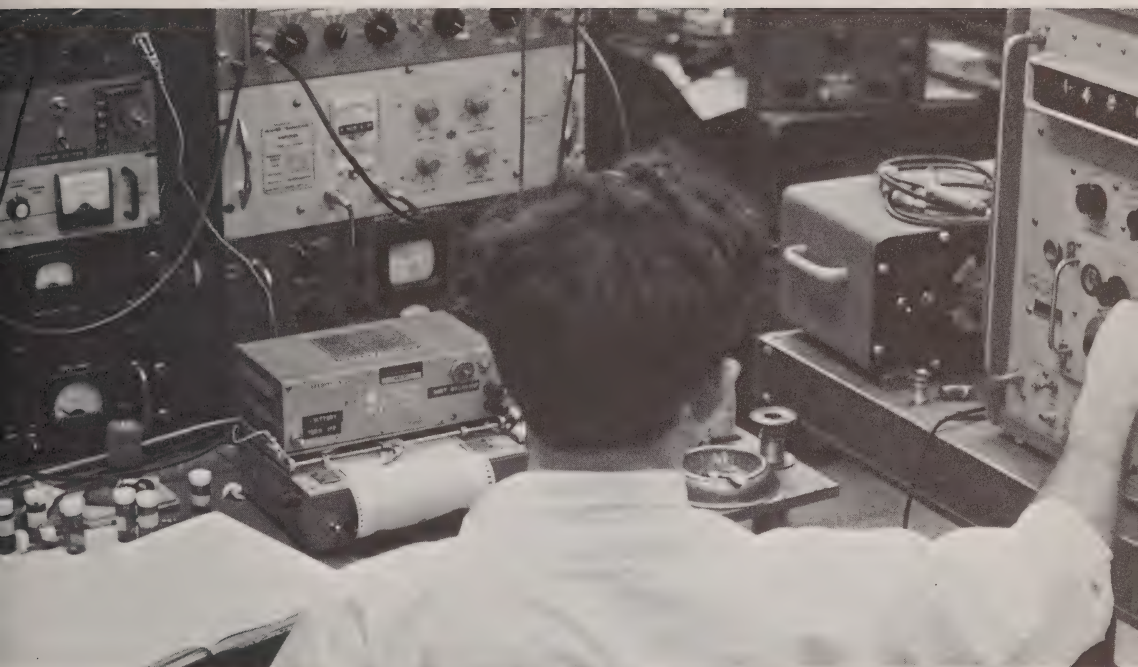
PASS-NO RECORD	A student may at the time of final semester registration in no more than four semesters choose one course for which he will either receive a P or, in the event of failure, have no evidence of the course entered on his permanent record, provided that no such course may be used in partial fulfillment of major requirements, (and provided that the total semester hours so chosen do not exceed 16.) A department may with the approval of the Academic Council designate certain courses which may not be chosen by students on this basis.						
REPORTING GRADES TO OUTSIDE SOURCES	Unless a student indicates in writing to the Dean of Students that he wishes it not be done in his case, information concerning academic performance will be released upon request to high schools attended by the student, to scholarship sources, to prospective employers and to selective service boards.						
WITHDRAWAL FROM COURSES	A student may, by presenting an appropriate withdrawal form to the Registrar, be allowed to withdraw from a course without a record of failure at any time during the first four weeks of classes, regardless of the grade he has thus far attained in that course, providing that, after withdrawal, he be carrying no fewer than twelve semester hours. At any time after the first four weeks of classes and up until two class-weeks before the beginning of the final examination period, the Chairman of the College Board may permit a student to withdraw from a course without a record of failure providing the student is not failing that course at the time of request and that after withdrawal he be carrying no fewer than twelve semester hours.						
COURSE CHANGES	A student may register for a course without special permission anytime up to the end of the second week of classes. Between the second week and mid-semester he may enter with the permission of the instructor and advisor (without petition).						
ACADEMIC STANDARDS	Candidates for the Bachelor's degree must obtain a final cumulative average of at least 1.85 in all courses taken at Clark.						
CLASSIFICATION OF STUDENTS	All students who have not been required to withdraw at the end of a given semester will be promoted if they have satisfactorily completed the following semester hours: <table> <tr> <td>To the sophomore class</td><td>24 sem. hrs.</td></tr> <tr> <td>To the junior class</td><td>54 sem. hrs.</td></tr> <tr> <td>To the senior class</td><td>84 sem. hrs.</td></tr> </table>	To the sophomore class	24 sem. hrs.	To the junior class	54 sem. hrs.	To the senior class	84 sem. hrs.
To the sophomore class	24 sem. hrs.						
To the junior class	54 sem. hrs.						
To the senior class	84 sem. hrs.						

PROBATION	Freshmen and Sophomores who receive a semester grade point average of less than 1.60, Juniors and Seniors who receive a semester grade point average of less than 1.70, and students who receive more than one failure in any semester will automatically be placed on probation.
DISMISSAL	Students may be required to withdraw after two consecutive or three non-consecutive probationary-level semesters.
EXAMINATIONS	Final examinations are regularly given at the end of each semester in most College courses. Approximately one week is set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, usually results in a record of failure in the course. Other examinations and tests may be given at any time during the semester at the convenience of the instructors.
CLASS ATTENDANCE	The College has no class attendance requirements. However, instructors have the prerogative of establishing such requirements for their own courses.
LEAVES OF ABSENCE	A student who is in good standing may apply to the College Board for a leave of absence. Such leaves are granted for a period of one or two semesters during which the student's records are kept active. At the conclusion of the period of leave, the student may return to the University without formal application for re-admission.



Honors, Awards, and Prizes

- ANNUAL HONORS** First honors and second honors are awarded at the end of each year to members of the freshman, sophomore and junior classes who have, in the judgment of the College Board, distinguished themselves by their scholarship during the year.
- COURSE HONORS** The bachelor's degree may be awarded *cum laude*, *magna cum laude* and *summa cum laude* to students whose records, in the judgment of the College Board, warrant this distinction.
- DEPARTMENTAL HONORS** A student may elect a program leading to a bachelor's degree with honors in a particular subject at the beginning of the junior year and, in some cases, at the beginning of the senior year. Under this plan, the department appoints an honors adviser who assists the student in planning a unified program of courses for the junior and/or senior years. The program may include a maximum of twenty-four semester hours in which the student works with a large measure of independence under the supervision of the adviser. In the senior year, the student must satisfactorily pass a comprehensive examination given by the department.
- Students may apply in writing to their major department for permission to take honors work, not later than May 1 in the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work. In exceptional cases and in certain departments, application may be made and admission approved by the department concerned as late as the first two weeks of the senior year but only with consent of the College Board.
- Admission to an honors program does not relieve the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any semester in which he has not maintained a standard satisfactory to the department in which he is doing honors work. If candidacy is terminated for any reason, the amount of credit to be allowed for honors courses will be determined by the College Board in consultation with the major department.
- The department may recommend the student's graduation with honors, high honors or highest honors, the recommendation to occur at the conclusion of the honors program.



**PHI BETA
KAPPA**

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in scholarship in programs which are clearly liberal in character. Although exact definition of the last phrase is difficult, and although there are diverse pathways to a liberal education, nevertheless it is generally recognized that a liberally educated person is characterized by genuine personal involvement in intellectual pursuits and by breadth of interest. Such a person should have an informed appreciation of the fine arts and of his own culture through its literature, and of a foreign culture as well. Furthermore, it is generally recognized that the rapid advances of the 20th Century in both the natural and social sciences demand of the liberally educated person an understanding of the philosophy, methods, history and important findings in these fields. In selecting candidates for membership, the Clark Chapter of Phi

Beta Kappa will take into consideration the extent to which the student has devoted himself to fulfilling these ideals of a liberal education.

OTHER
HONORARY
SOCIETIES

Delta Phi Alpha: National Honor Society in German.
Gamma Theta Upsilon: National Honor Society in Geography.
Phi Sigma Tau: National Honor Society in Philosophy.
Psi Chi: National Honor Society in Psychology.
Sigma Pi Sigma: National Honor Society in Physics.

PRIZES AND
AWARDS

Homer Payson Little Award in Geology: Provided by a group of interested alumni, the award is presented each Spring to that student who has achieved the highest record in geology classes during the year. The award is named in honor of the late Dr. Little, professor of geology and Dean of Clark College from 1922 to 1954.

Prentiss Cheney Hoyt Poetry Prize: A prize of \$25 is awarded annually by the English Department for the best poem by an undergraduate. The prize money is received from a fund established by alumni as a memorial to Dr. Hoyt, a professor of English at Clark from 1909 to 1920.

Loring Holmes and Ruth Dodd Drama Contest: A prize of \$50 is awarded by the English Department to the student writing the best one-act play. Dr. Dodd was professor of English at Clark from 1910 to 1949 and was chairman of that department.

Physics Achievement Award: Each year, the student in Physics 11 who, in the opinion of the instructor, shows the best performance and improvement in the course work is given a copy of the *Handbook of Chemistry and Physics*, made available by the Chemical Rubber Publishing Company.

Chemistry Achievement Award: A copy of the *Handbook of Chemistry and Physics* is awarded each year to the student who ranks at the top of the class in Chemistry 11.

American Institute of Chemists Award: A medal is awarded by the Chemistry Department each year to a senior chemistry major who demonstrates a high potential for the advancement of chemistry.

Ahepa Greek Prize: A prize of \$25 is awarded each year to the best student in Elementary Greek. The prize is made available by the Worcester chapter, Order of Ahepa.

Tuition and Other Charges

GENERAL INFORMATION

Undergraduate tuition, fees and other charges for 1967-68 are listed below. Special fees may be required of students in certain departments. Charges for the Evening College and the Summer School can be found in their respective catalogs. Tuition, fees and other charges for graduate students are listed under the catalog section on The Graduate School.

Tuition, board and dormitory charges and certain fees are due and payable at the beginning of each semester. These dates for 1967-68 are *September 11* for the first semester and *February 5* for the second semester. No one is permitted to register for any semester until all financial obligations have been satisfactorily arranged with the University. Veterans relying on government aid should have sufficient resources at the time of registration to meet the initial payments required by the University. A penalty fee is levied for late registration and late payment of charges.

TUITION

Tuition for each semester is based on a normal program of from 12 to 18 semester hours of credit inclusive. Students who enroll for more or less than the normal program are charged the full tuition plus \$80.00 per semester hour for all semester hours above 18 or minus \$80.00 per semester hour for all semester hours under 12.

Special students who register for less than 12 semester hours are charged at the semester hour rate of \$80.00.

REFUND

A student who withdraws during the first week of any semester is allowed a refund of 80 per cent on tuition; during the second week, 60 per cent; during the third week, 40 per cent; during the fourth week, 20 per cent; after the fourth week there is no refund. No refund on fees and other charges, including board, is allowed a student who withdraws from the University.

When a student has left the University on the advice of a doctor within the first four weeks of a semester, and a final decision is made later that the student must withdraw from the University, tuition refund is made retroactive to the date of the doctor's advisement, based on the schedule listed above.

BOARD	All undergraduates, with the exception of those living with their parents, legal guardian, spouse or an adult member of the immediate family, and seniors living off campus, are required to take their meals at the University's dining halls.
CONTINGENCY DEPOSIT	All undergraduates are required to pay a \$25.00 deposit to cover minor charges, such as property damage and identification cards, which may be incurred during the academic year. They are billed each year for whatever charges are incurred; the balance is refundable upon completion of their studies.
DORMITORY RESIDENCE AND DEPOSIT	<p>All undergraduates, with the exception of those living with their parents, legal guardian, spouse or adult member of the immediate family ordinarily must live in University operated dormitory facilities. In the event that the number of students required to live in the dormitories exceeds the number of spaces available, some students will be allowed to live off-campus upon request. The specific students allowed to do so are determined on the basis of age, class status and financial need. Parental permission is required in the case of women students. Students, except seniors, allowed to live off-campus are still responsible for payment of board charges.</p> <p>A dormitory deposit of \$50.00 is required each spring of upper-classmen to reserve a place in a dormitory. It is credited toward the dormitory charges. The deposit is forfeited if the student does not enroll for the specified semester.</p>
STUDENT ACTIVITY FEE	This fee of \$20.00 per semester, administered by the Student Council, is required of all undergraduates, including part-time students, but not special students.
INSURANCE	All students are expected to subscribe to the student insurance plan which gives year-round coverage for health and accidents, unless they are similarly protected by other insurance. A fee of \$27.00 is charged.
APPLICATION FEE	This fee of \$10.00 must accompany the application for admission to the Colleges. It is not refundable.

ADMISSION DEPOSIT	This fee of \$200.00 is required of freshman students when they accept the University's formal offer of admission. It is credited toward charges for the first semester of the freshman year. The deposit is forfeited if the student does not enroll for the specified semester.
TUITION DEPOSIT	This fee of \$200.00 is required of all students planning to return to the University for their sophomore, junior or senior years. The fee is payable by <i>July 1</i> , and is credited toward charges for the first fall semester. The deposit is forfeited if the student does not enroll for the specified semester.
KEY DEPOSIT	Fees for keys may be required of the student for entrance to buildings, laboratories, personal lockers or mail boxes.

SUMMARY OF TUITION AND OTHER CHARGES

TUITION	Full Program (12 to 18 semester hours)	\$950.00 per semester
BOARD		\$300.00 per semester
DORMITORY CHARGES	Room rent (single)	\$225.00 to \$287.50 per semester
	Room rent (double)	\$200.00 to \$250.00 per semester
ACTIVITIES FEE		\$ 20.00 per semester
LABORATORY FEES	Physics, Biology, Geology, Psychology, Languages and Chemistry 11	\$ 20.00 per semester
	All other Chemistry courses	\$ 20.00 per semester
OTHER FEES	Application (undergraduate)	\$ 10.00
	Matriculation	\$ 5.00
	Induction (Residential Freshmen and Transfers)	\$ 20.00
	(Commuting Freshmen and Transfers)	\$ 12.00
	Diploma (Seniors)	\$ 5.00
	Insurance	\$ 27.00
	Late registration	\$ 5.00
	Late payment of charges	\$ 5.00
	Transcripts (no charge for first one)	\$ 1.00
DEPOSITS	Admission	\$200.00
	Tuition	\$200.00
	Dormitory	\$ 50.00
	Contingency (see page 54)	\$ 25.00



Student Services

DINING HALLS

University Dining Halls in Little Student Commons, Jefferson Hall, and Dana Center are operated for the convenience of the students and staff of the University. Service is cafeteria style. Undergraduates who do not live with their parents, legal guardian, spouse or an adult member of the immediate family, except seniors who elect to live off-campus, are responsible for the payment of normal board charges, and are assigned at the beginning of each semester to a dining facility according to place of campus residence, and, whenever possible, according to their own wishes. Other members of the University community may eat at University Dining Halls on a semester basis or for single meals. The snack bars in Jefferson Hall and Dana Center are open to all members of the Clark community.

DORMITORIES

With the exceptions noted on page 54, all resident undergraduates must live in University operated dormitory facilities. Rooms are reserved on receipt of the dormitory deposit fee which is later applied to room rental charges.

The University reserves the right, after consultation with dormitory residents, to use dormitory rooms and facilities for University sponsored conferences held during vacation periods.

INFIRMARY

The University Infirmary provides for minor medical services to all students and temporary in-patient care for resident students. A full-time nurse and a part-time physician are in attendance. Other physicians, other health specialists, and hospitals are available in Worcester.

HEALTH AND
ACCIDENT
INSURANCE

Subscription to a low-cost health and accident insurance plan covering ordinary medical expenses not covered by the University is required of all students unless they are similarly protected by other insurance.

PSYCHOLOGICAL
SERVICE
CENTER

A psychological service center on campus provides testing and counseling service to students who wish help in academic or personal adjustment. If desired, other more appropriate University or community resources can be recommended to the student. The staff includes the Center director, other clinical psychologists in the Department of Psychology and consultants in psychiatry, psychiatric social work and clinical psychology. The Center is directed by Dr. Roger Bibace, associate professor of clinical psychology.

STUDENT
COUNSELING
CENTER

Individual counseling on problems of educational and vocational planning and adjustment to college life is also available through the Student Counseling Center. The service supplements the advisory services of individual teachers and deans. The office assists the student in job exploration, informing him of available positions and arranging interviews with potential employers. Students are urged to establish a permanent reference file. Part-time employment opportunities are listed with the office for students who wish to work during their college career to help meet college expenses. The Center is directed by Dr. William E. Topkin, assistant dean of students.

Student Life

The Clark community is a liberal environment in which students are expected to take primary responsibility for the social as well as the intellectual aspects of their lives.

STUDENT ACTIVITIES AND FEE

The student activities fee, levied and administered by the Student Council, partially supports non-athletic activities and admits students to all athletic contests on campus, provides them with the student publications and admits them to certain lectures, plays and concerts.

LECTURES AND CONCERTS

Throughout the year, noted scholars, musicians and artists and public figures are brought to the campus for lectures and concerts. Among those heard during 1966-67 were Vice President Hubert H. Humphrey, Nel Oosthout, Dr. Sydney Hook, Frans Reynders, Herbert Aptheker, The Melos Ensemble of London, Jean Piaget, Dr. Hudson Hoagland, the French theatre company, Le Treteau de Paris, Charles A. Weltner, Carlos Montoya, Paul Butterfield, Paul Weiss, and Sergiu Luca.





STUDENT
COUNCIL

The Student Council, elected by the entire student body each spring, is recognized as the official organization representing the student body in its participation in the affairs of the College.

MUSIC

Musical organizations open to all students include the University Chorale, Concert Choir, Instrumental Ensemble, Madrigal Singers, and the University Orchestra. The Opera Group has produced Gilbert and Sullivan's *Trial By Jury*, Handel's *Dido* and *Aeneas*, Offenbach's *La Périchole*, and Rameau's *Platée*.

DRAMATICS

The Clark University Players Society each year presents dramatic offerings with student casts. It has a distinguished record of productions which, in recent years, has included *The Cherry Orchard*, *The Crucible*, *Cock-a-Doodle Dandy*, *The Waltz of the Toreadors*, *The Alchemist*, *The Physicists* and *The Country Wife*. An experimental theater group also performs in productions such as Beckett's *Endgame*, Pinter's *The Collection*, and *The Tiger and The Typists* by Shisgal.



UNIVERSITY
CULTURAL
PROGRAMS AND
GUEST
LECTURERS

Guest lecturers, frequently with distinguished reputations, panel discussions, concerts, ballet, and professional theater are brought to campus by a number of organizations which include, among others, the Cultural Programs Committee, the student Fine Arts Series, and the Student Council Assembly Committee. The Heinz Werner Memorial Lecture Series and the Harrington Public Affairs Lectureship have attracted men of recognized accomplishments, including Professor Jean Piaget and ex-congressman Charles Weltner of Georgia.

COMMUNITY
CULTURAL
OPPORTUNITIES

The city of Worcester also offers to Clark students many other cultural opportunities. The Music Festival in October featuring the Detroit Symphony, and the Community Concert Series are examples. The Worcester Art Museum, world famous for its outstanding collections and art school, sponsors numerous lectures, movies, and concerts.

SPEECH AND
DEBATE

The Debate Society participates in intercollegiate debate contests.

RELIGIOUS
ORGANIZATIONS

Religious organizations include the Christian Fellowship Organization, Clark Christian Association, The Newman Club, Hillel Counselorship, and the Clark Student Humanist Association.

FILMS

Programs of films, both conventional and experimental in nature, are provided regularly by several campus groups including the student-run Clark Film Society. In addition to these professional productions, student-produced experimental films are presented on occasion during the year.

PUBLICATIONS

Students may join the staffs of *Scarlet*, weekly student newspaper; *Helicon*, student literary magazine; *Fotch*, student humor magazine; *Pasticcio*, student yearbook; and other journals of student opinion.

RADIO STATION	A campus radio station, WCUW, organized in 1964, broadcasts approximately 70 hours per week.
SOCIAL ACTION ACTIVITIES	Many Clark students are concerned about issues of war and peace, civil rights, and poverty. Frequently, they participate in national programs and in community action groups and initiate campus organizations, lectures, discussions, and debates to confront these critical issues.
OTHER ORGANIZATIONS	Other campus organizations are affiliated with areas of department instruction, such as the Physics, Psychology and German clubs; hobbies or interests, such as the Chess Club, Pre-Law Club, Sports Car Club, and Photography Club.
SOCIAL ACTIVITIES	Informal dances and concerts are sponsored by the student Social Affairs Board. Fall and Winter Weekends are examples of two major social events; smaller dances and parties are provided by the fraternities.
FRATERNITIES	There are four fraternities: Kappa Phi, Lambda Chi Alpha, Phi Sigma Delta, and Tau Epsilon Phi. All own fraternity houses near to the campus. A colony of Zeta Beta Tau has also been recently established.
SORORITIES	There are no sororities.
GRYPHON AND PLEIADES	Membership in Gryphon and Pleiades—men's and women's senior honorary societies—is determined by criteria established by the groups themselves. Though their roles vary according to the interpretations of their membership, Gryphon and Pleiades customarily assist at Freshman Registration and also play important roles in innovating new programs as well as maintaining many of the traditions of the College.
SCARLET KEY	Scarlet Key, the sophomore honorary-service society, defines as its principal responsibility the organization of tours for campus visitors and in other ways hosting University guests. Membership is open to all interested sophomore men and women.
STUDENT PARTICIPATION IN UNIVERSITY AFFAIRS	Frequently important ideas for change are generated by students, acting either through committees, e.g., the Student Council Academic Committee, the Student-Administration Committee, the Student Facilities Board, etc., or through informal dialogues with members of the faculty and administration.



PHYSICAL
EDUCATION

Two hours per week of physical education is required of freshmen and sophomores. Students are excused from this requirement only on the recommendation of the medical director. Programs are designed to stimulate and encourage students to wider participation in physical activities to promote health and mental efficiency and lead to continuing participation throughout life.

MEN'S
PROGRAMS

Men may choose activities from the following areas:

1. *Intercollegiate Athletics*

For men with a reasonably high level of skill and a well defined and strong interest in athletic competition, intercollegiate schedules at the Varsity and Freshman levels are arranged in baseball, basketball, golf, eight-oared shells, soccer, tennis, and cross-country. Competent coaches have immediate supervision over the teams.

2. *Intramural Athletics*

The opportunity to gain some of the benefits of participation in competitive athletics is offered to all students through organized intramural competition in touch football, basketball, volleyball, tennis, handball, table tennis, paddle rackets, and softball.

3. *Physical Education Classes*

Instruction and practice is given in a wide variety of activities including work with a number of team games, individual and dual sports, apparatus, and calisthenics.



**WOMEN'S
PROGRAMS**

The physical education program for women requires, during each of the two years, attendance at classes in body mechanics and one of the rhythmic activities. Participation in one group sport and in one individual sport is also required. Folk dancing, square dancing and modern dancing are offered.

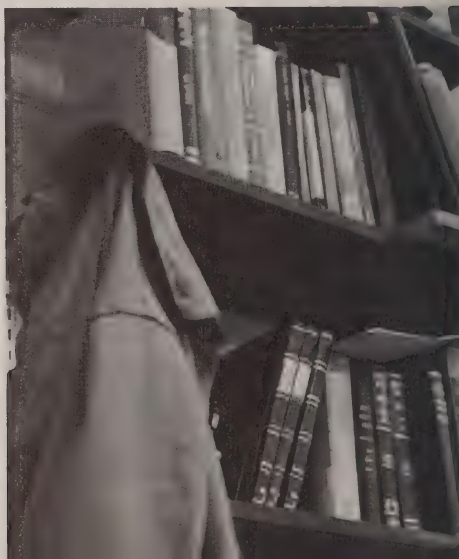
Students in the Women's College can participate in archery, badminton, basketball, fencing, field hockey, golf, horseback riding, tennis, softball and volleyball. Tournaments are held in the spring and fall and trophies are awarded to winners. Women use their own gymnasium for practice but have the use of the Alumni Gymnasium for games with outside organizations.

ELIGIBILITY

Students carrying less than a full program of studies are ineligible to participate in organized extracurricular competitive athletics unless the reduced program permits graduation at the end of the year in which the program is carried. A student transferring with advanced standing from another four-year college is ineligible for one calendar year from the date of registration at Clark to participate in any varsity sport. Special students are not normally entitled to participate in competitive intercollegiate sports.

**ASSOCIATION
MEMBERSHIPS**

Clark University is a member of the National Collegiate Athletic Association, the New England College Athletic Conference and numerous sports associations.



*Every best kind of education is obtained in
things ones self under competent direction
with good guidance."*

— CHARLES W. ELIOT

SCHOOL OF
GEOGRAPHY
ROOM

THE GRADUATE SCHOOL

The Graduate School

GENERAL INFORMATION

Clark University was initially established as one of America's first institutions dedicated exclusively to graduate study and research. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years. Under the administration of the Graduate Board, Clark offers programs leading to master's and doctor's degrees to qualified holders of a bachelor's degree or its equivalent of attainment.

Master of Arts degrees are offered in the fields of biology, biomedical engineering (in cooperation with Worcester Polytechnic Institute), chemical physics, chemistry, economics, English, education, geography, government, history, international relations, mathematics, physics, psychology and sociology. A Master of Business Administration degree is offered through the Evening College of the University, and is described in the catalog section on the "Evening College."

Doctor of Philosophy degrees are offered in biology, chemistry, chemical-physics, economics, geography, history, international relations, mathematics, physics and psychology. A Doctor of Education degree is offered by the Department of Education.

Post-doctoral training is conducted in psychology and the sciences. Inquiries should be addressed to the chairman of the department concerned.

Departments which do not at present accept candidates for graduate degrees may offer courses which are suitable for inclusion in a program of graduate study.

Scholarships and fellowships are listed at the end of this section. Additional information concerning departments and their offerings will be found in the section entitled "Departments and Courses."

INQUIRIES

Inquiries by students in American institutions concerning specific programs of graduate work should be addressed to the chairman of the department concerned. Inquiries by foreign students should be addressed to the Dean of the Graduate School.

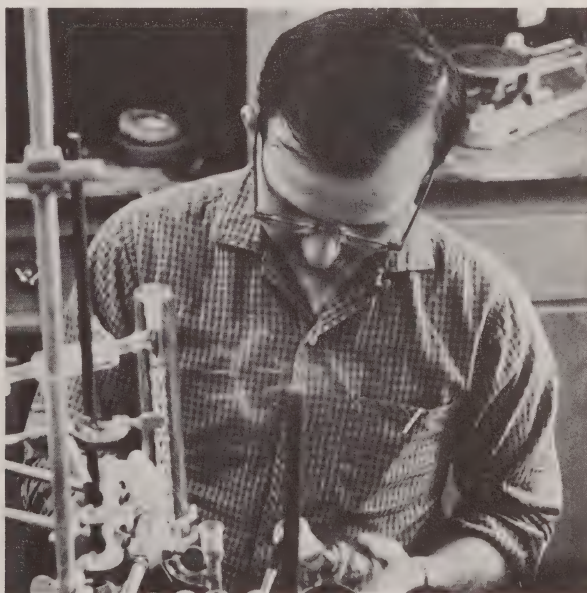
ADMISSION TO THE GRADUATE SCHOOL

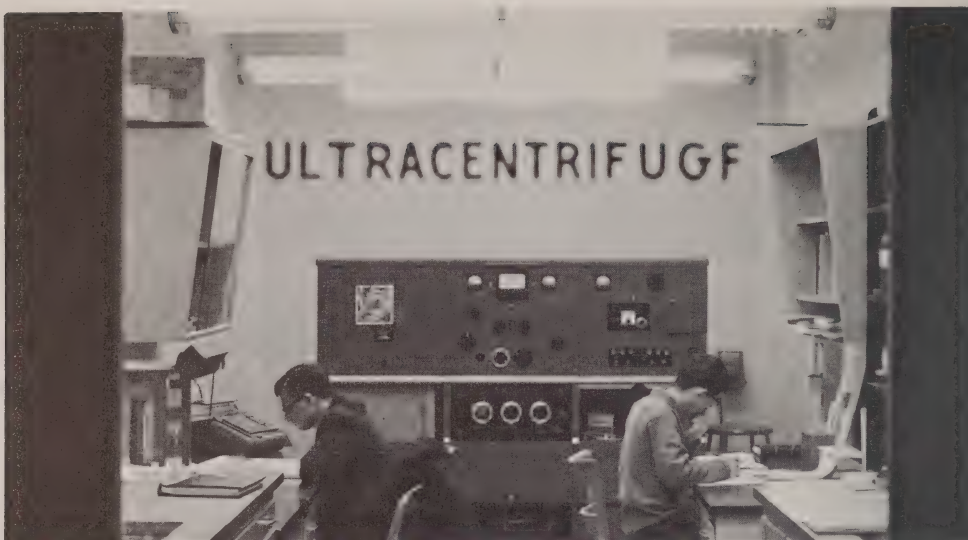
Admission to the Graduate School may be granted only by the Graduate Board on the recommendation of a department of the University. Admission to the school does not imply admission to candidacy for a degree.

Application: A prospective applicant from an American institution should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with application blanks. These should be returned to the chairman of the department. In addition, the applicant should arrange to have an official transcript of his undergraduate, and any subsequent work, and at least two letters of recommendation from persons who are competent to judge his qualifications for graduate work sent directly to the chairman of the department concerned.

Departments may request the submission of additional material, and some require a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, New Jersey. All applicants are urged to take, and to submit the results of the Graduate Record Examination verbal, quantitative and advanced tests.

A foreign student, if encouraged by the Dean to make formal application, should provide a certified English translation of his official record (if not in English), evidence of English proficiency preferably by his score on TOEFL (administered by the Educa-





tional Testing Service, Princeton, New Jersey), at least two letters of recommendations and a statement concerning his financial resources, or agency support.

Applications for both admission and for financial aid should be completed not later than February 20 if the applicant intends to begin his studies in the following September. Applications may be submitted, however, throughout the year and are periodically considered by the Graduate Board.

Admission: Admission to the Graduate School is granted for entry only at a specified time and lapses if the student fails to enter at that time. Admission as special or part-time graduate students may be granted to qualified applicants who do not wish to work for a degree or who cannot devote full time to study.

If a student, when admitted, was a candidate for a degree elsewhere, he must arrange upon receipt of the degree to have a supplementary transcript, including a notation of the degree conferred, sent directly to the Dean of the Graduate School.

MASTER OF ARTS

Residence: Twenty-four semester hours of study in residence is a minimum requirement for a master's degree. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty.

Foreign Language: A reading knowledge of a foreign language, usually French or German, may be required of candidates for the degree of master of arts at the discretion of the major department.

Candidacy: Application for admission to candidacy for a master's degree should be filed with the Dean of the Graduate School not later than the first week of the last full semester which the student expects to spend in residence as a candidate for this degree.

Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University, obtained the written endorsement of his major department and paid the diploma fee and publication fee.

Candidacy for the degree of Master of Arts is valid through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If the candidacy expires without the degree having been awarded, the diploma and publication fees, less any expenses incurred, are returned.

Course and Examination Requirements: Each student must meet a minimum course requirement of 30 semester hours, and his program must be approved by the chairman of the department. One of his courses, normally three to six semester hours, may be a research course devoted to the preparation of his thesis. Credit for a maximum of six semester hours of course work at another institution may be approved by the Graduate Board upon the recommendation of the department.

Each candidate must make a satisfactory record in such written examinations as may be required by the major department and in a final oral examination by a committee of three or more, two of whom must be members of the Graduate Board.

Thesis: The thesis is written on a topic in the field of the student's special interest under the supervision of a member of his major department. The ribbon copy of the thesis, a précis approved by the supervising instructor, and an academic history must be deposited in the Registrar's office not later than three

weeks before the date of the commencement at which the degree is to be conferred. At least one additional copy of the thesis and the précis must be delivered to the major department which may require more than one copy. The précis may not exceed 75 words in length. The title page, précis and academic history forms are obtainable from the Graduate School Office. The ribbon copy of the thesis must be typed on prescribed paper, marginally ruled in black and obtainable at the University Bookstore. For directions concerning the format of the thesis, see "The Master's Thesis" issued by the Graduate School Office with its notification of admission to candidacy.

The thesis is deposited by the Registrar in the University Library. The précis is printed by the University in an annual publication, *Dissertations and Theses*.

Alternative Program: A candidate for the degree of Master of Arts may be recommended for the degree without a thesis when he has passed the preliminary doctoral examination.

MASTER OF
ARTS IN
EDUCATION

The residency, candidacy, course and examination requirements are basically the same as those listed for the degree of Master of Arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to (1) prepare a thesis or special report, as required for the M.A. degree; or (2) elect two additional semester courses (six semester hours) in subject-matter fields; or (3) elect a double seminar, six semester hours, in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of Master of Arts in Education may be found in the catalog section, "Departments and Courses," listed under the Department of Education.

MASTER OF
BUSINESS
ADMINISTRATION

This degree is offered through a program of the Evening College of the University. For further information, see the catalog section on the "Evening College."

DOCTOR OF
EDUCATION

The program leading to the degree of Doctor of Education emphasizes educational psychology, guidance and counseling. The

requirements for this degree closely parallel those for the degree of Doctor of Philosophy (see below). Applicants for admission to the program are required to submit results of the Graduate Record Examination. Foreign students may be excused from this admission requirement.

DOCTOR OF
PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy.

Residence: The minimum requirement is one year of full-time study (not less than 24 semester hours), or its equivalent in part-time work, in residence which is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty. If the degree of Master of Arts has been earned at Clark, this requirement is an addition to the residence requirement for that degree.

Foreign Language: A prospective candidate must pass an examination in the reading of a modern foreign language to be chosen at the discretion of his department from the following: French, German, Russian, Spanish. The Educational Testing Service Foreign Language Tests are used. The language examination should be taken as soon as possible, but must be passed at the latest before filing application for admission to candidacy.

Each graduate department may make such additional language or related requirements as the student's field of research may demand, and must report such requirements in each case to the Dean of the Graduate School.

Preliminary Examination: Upon completion of preparation in his fields of study a prospective candidate takes a preliminary examination set by his major department. This examination may be written or oral, or a combination of both. The chairman of the department may invite non-members of the department from within or without the University to participate in the examination.

Candidacy: Applications for admission to candidacy must be filed with the Dean of the Graduate School no later than November 1st by students who expect to receive the degree at the following commencement.

An application for admission to candidacy will be considered by the Graduate Board when the applicant has (1) completed two full academic years of graduate work, or its equivalent in part-time work, including one year at Clark University; (2) passed the required examination in a foreign language, (3) passed a preliminary examination in his chosen field of study; (4) obtained the written endorsement of his major department; and (5) paid the diploma fee and publication fee.

Candidacy for the degree of Doctor of Philosophy is valid through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If candidacy expires without the degree having been awarded, the diploma fee and publication fee, less any expenses incurred, are returned.

Dissertation: A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate. The dissertation, approved by the chief instructor or dissertation committee, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a précis, not exceeding 75 words, both approved by the instructor or committee under whom they were written, are also required.

Not later than four weeks before the commencement at which the degree is to be conferred, the ribbon copy of the dissertation, together with two official title pages, an academic history, the ribbon copy of the abstract and of the précis, each in a form prescribed, must be delivered to the Registrar. At the same time, one or more copies of the dissertation and of the abstract may be required by the major department. The title page, précis and academic history forms are obtainable from the Graduate School Office. The ribbon copy of the dissertation must be typed on prescribed paper, marginally ruled in black, obtainable at the

University Bookstore. For directions concerning the format of the dissertation, see "The Doctoral Dissertation" and "Suggestions for the Preparation of Doctoral Dissertations for Microfilming" issued by the Graduate School Office with its notification of admission to candidacy.

The Registrar deposits the dissertation and the abstract in the University Library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Mich., and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts*; the précis is printed by the University in an annual publication, *Dissertations and Theses*.

Final Examination: The final examination is oral and lasts for at least two hours. Additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and, at the discretion of the examining committee, may be questioned on the entire special



field of his study. The oral examination is conducted by a committee of at least four members, composed of the chairman of the department, at least one other member of the Graduate Board, and such members of the department and non-members from within or without the University as the chairman may appoint. The chairman notifies the Dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The Dean is authorized to invite any person from within or without the University to be present and to assist in the examination.

POST-DOCTORAL STUDY Post-doctoral students are classified in three categories: *Honorary Fellows* who are visitors for varying lengths of time, always more than a few days, who wish to observe activities of a department, to study, or to carry on research, but without formal teaching duties or support by the University; *Research Associates* who work full-time with designated members of the University staff on research projects, normally supported by grants, without formal teaching duties but with some responsibility for directing laboratory assistants; and *Trainees* who enroll in a formally offered post-doctoral training program.

The Honorary Fellows and Research Associates enjoy faculty status, although the extent to which faculty privileges may be granted may be restricted by availability of space and other resources.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS Graduate fellowships and scholarships are provided for well-qualified graduate students by the University from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds, and in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this employment yields useful experience.

Application: Application for a scholarship or fellowship to begin in September should be made before *February 20* to the chairman of the department in which the applicant expects to do his major work. Late applications are acted upon periodically.

All applications, after endorsement by the department, go to the Graduate Board for final action.

Research Fellowships: These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program.

Teaching Assistant Scholarships or Fellowships: These may be awarded to teaching assistants who are engaged in full-time activity on campus, of which approximately half-time is devoted to teaching duties and approximately half-time is devoted to graduate study.

Teaching Assistantships: In several departments, teaching assistantships, involving less than half-time, are available with stipends which vary according to the amount of service agreed upon.

Note that the departments of Biology, Chemistry, Economics, Geography, History, Mathematics, Physics, Psychology, Sociology, and the Romance Language program in Education require teaching experience for graduate degrees. See the departmental announcements in the catalog section on "Departments and Courses."

Assistantships: In several departments, assistantships are available. They involve a variety of services with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

Graduate Fellowship and Scholarship Funds: Stipends for graduate fellowships and scholarships are provided by:

THE GEORGE FRISBIE HOAR FUND, the gift of Andrew Carnegie in honor of the second president of the University's Board of Trustees.

THE AUSTIN S. GARVER FUND, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

THE CHARLES H. THURBER FUND, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the board from 1919 to 1937.

THE GEORGE S. BARTON FUND, a bequest from the Honorable George S. Barton of Worcester, to be used for the benefit of native-born citizens of Worcester.

THE ALUMNI ASSOCIATION FUND, provided by alumni who hold the degree of Doctor of Philosophy to benefit students studying for that degree.

THE JOSEPH F. DONNELLY MEMORIAL FUND, a bequest from Lucretia F. Donnelly to help men who are enrolled in a course leading to the degree of Doctor of Philosophy.

GRADUATE SCHOOL SCHOLARSHIP FUND, a bequest from Alexander H. Bullock, a member of the Board of Trustees from 1926 to 1946 and president of the board from 1938 to 1946.

GRADUATE AID

THE JOHN WHITE FIELD FUND, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

THE ELIZA D. DODGE FUND, to be granted to graduate students of limited means who are engaged in research work.

THE MYERS FUND, a gift of George E. Myers, Ph.D., '06, to assist graduate students to do research in education and psychology.

GRADUATE LOANS

Loans, bearing interest at three percent per year, are available for graduate students from these funds:

THE MARY S. ROGERS SCHOLARSHIP AND LOAN FUND, established in 1926 for the benefit of students in the graduate school.

THE SARAH M. THURBER LOAN FUND, established by the late Dr. Charles H. Thurber, former president of the University Board of Trustees, as a memorial to his mother.

For loans from these and other sources that may become available, application should be made at the College Financial Aid Office.

DEPARTMENTAL FUNDS

THE WALLACE W. ATWOOD RESEARCH FUND. The income of this fund may be used at the discretion of the staff in the Graduate School of Geography for the promotion of field studies in geography by any member of the staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

THE CHESTER BLAND FUND. The income of this fund is preferably used to provide aid to a promising student, either in residence



or engaged in research elsewhere under the direction of the Department of History, Government and International Relations. It may also be used to defray the expense of visiting lecturers or of departmental research.

THE WALLACE W. GREENWOOD FUND. The income only is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two departments.

THE MORTON L. "SONNY" LAVINE FOUNDATION is a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History, Government and International Relations.

THE LIBBEY FUND, bequeathed to the University by Mary E. Libbey, is to establish a fellowship in physical geography and to aid the Department in that field.

OTHER FUNDS

In addition to the Clark departmental funds listed above, several departments participate in national fellowship or traineeship programs; including:

HIGHER EDUCATION ACT, TITLE V-C fellowships: Prospective Teacher fellowships in Geography: Experienced Teacher fellowships in Geography and History.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION traineeships in the sciences.

NATIONAL DEFENSE EDUCATION ACT, TITLE IV fellowships in chemistry, geography, history and psychology.

NATIONAL SCIENCE FOUNDATION traineeships in biology, chemistry, economics, geography, mathematics and psychology.

PUBLIC HEALTH SERVICE fellowships and traineeships in biology, chemistry and psychology.

UNITED STATES STEEL fellowship in economics.

For further information consult the chairman of departments or the Dean of the Graduate School.

HOUSING AND BOARD

Off-campus rooms for both men and women are available in the immediate area of the University. In addition, there is a limited number of rooms for men in the Graduate House and of apartments for couples in University buildings. For information concerning University accommodations, write directly to the Office of Buildings and Grounds, which also keeps a bulletin board of available off-campus rooms and apartments. Students should plan to arrive a few days before registration in order to arrange for housing.

Graduate students are invited to take advantage of board in the University dining halls at the cost of \$600 for the academic year (20 meals per week except during vacations). They will also find the Snack Bar in Jefferson Hall available for single meals.

INFIRMARY AND INSURANCE

Students paying full tuition are entitled to the use of the University infirmary without supplementary fee; scholars and fellows must pay the infirmary fee of \$10. All students may avail themselves of the Accident and Sickness Insurance offered for the calendar year at a cost of \$27, plus the infirmary fee (if not covered by fully paid tuition). Brochures explaining the services covered by the insurance policy and application blanks may be procured from the Graduate School Office.

Graduate Tuition and Other Charges

GENERAL INFORMATION

Every student must pay the matriculation fee upon first entering the University. Identification cards are required each year of residence. Tuition is due at the time of registration. A late registration fee is charged if registration is not completed by the end of the second week of the semester. Graduate students do not pay laboratory fees, but departments may make assessments for other purposes. Candidates who are not in residence must pay the non-resident fee until the requirements for the degree are fulfilled; non-payment will automatically terminate candidacy.

SCHEDULE OF TUITION AND OTHER CHARGES

Matriculation Fee	\$5.00
Identification Card	\$1.00
Late Registration (after second week of the semester)	\$5.00

TUITION Full Program (12 to 18 semester hours) \$950.00 per semester

If less than a full program, the student will be charged according to the fraction of a program indicated by the Chairman of the department on the registration card.

Special (Graduate) Students	\$80.00 per semester hour
ETS Foreign Language Tests	7.00
Infirmary (optional for Scholars and Fellows)	10.00
Insurance (optional for all students)	27.00

CANDIDACY FEES

Master of Arts Diploma	5.00
Master of Arts Publication	10.00
Doctor's Diploma	25.00
Doctor's Publication	30.00

NON-RESIDENT CANDIDATE FEES (Payable on November 1 and March 1)

Master's Candidates	12.50 per semester
Doctoral Candidates	25.00 per semester

The fees double upon renewal of candidacy.

(For board and dormitory charges, see "The Undergraduate College"; for the Master of Business Administration tuition and fees, see the "Evening College Catalog.")

THE SUMMER SCHOOL





SUMMER STUDY Intensive instruction in numerous fields of study is offered through two summer programs: a six-week summer session and a three-week intersession program. A variety of courses is offered for undergraduates, graduate students and teachers. A student may register for nine semester hours of credit each summer by attending the Intersession and the Summer Session. Evening courses are also available during the summer to all students to continue their education while engaged in day-time employment. The student is encouraged to attend informal afternoon seminars, conferences and week-end excursions to New England cultural centers.

DEGREES AND CREDIT All courses offered in the Summer Session or Intersession programs are accepted at Clark for credit toward bachelor's degrees unless they are specifically limited in the description of the course. Many courses count toward the degrees of Master of Arts, Master of Arts in Education and Doctor of Philosophy. However, approval for such courses should be obtained in advance from the student's major department.



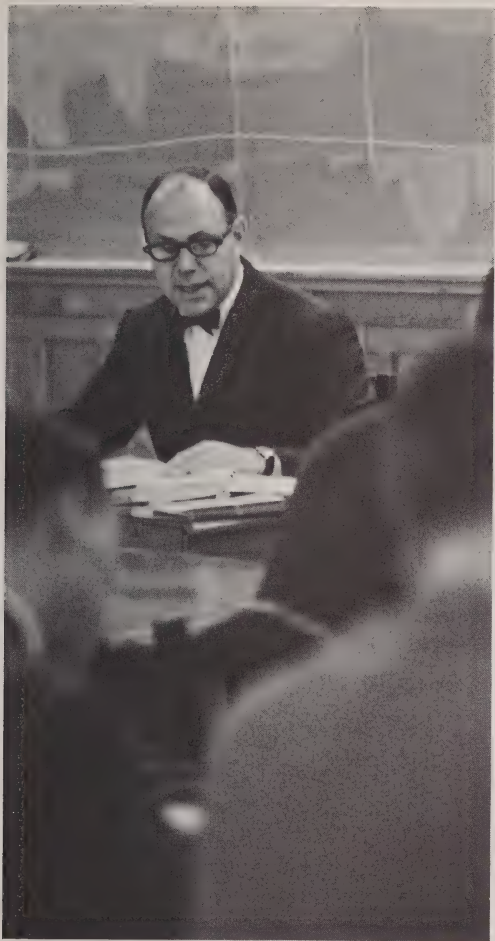
Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

Each single course offered in the Summer School yields three semester hours of credit. The double courses in languages and occasionally other subjects, which meet for two lecture periods a day for six and one-half weeks, yield six semester hours of credit.

A student may carry in a normal program one course in the Intersession and two courses in the Summer Session. Permission to carry an additional course may be granted but only in exceptional cases and with approval in writing prior to registration.

SUMMER
SCHOOL
CATALOG

Detailed information concerning the Summer Session and Intersession are contained in a Summer School catalog which may be received upon request from the director of the Summer School.



EVENING COLLEGE

The Evening College

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a life-long process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts. Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to prepare for positions of increased responsibility.

Secondly, the Evening College provides an opportunity for adults to earn the bachelor's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the degree of Bachelor of Science in either general studies or business administration, to the degree of Bachelor of Fine Arts, and to the degree of Master of Business Administration. The Evening College also offers the Diploma in General Studies after completion of a short formal program in liberal education designed specifically for adults.

Finally, as a community service, the Evening College organizes frequent non-credit short courses, institutes and seminars, which are tailored to the specific needs of various civic, professional and business groups.

ADMISSION

Students may be enrolled for either individual courses or formal programs of study.

Individual Courses: Admission to individual courses in the Evening College is open to all interested adults seeking to further their education. High school graduation is not required but



desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Advanced courses for which prerequisite courses or experience are indicated are open only to persons who meet the stated requirements.

Admission To Formal Programs: Adults applying for a formal program of study in the Evening College will be required to submit records of their previous schooling prior to admission. Except under unusual circumstances applicants must possess a diploma from an accredited high school. Applicants for the Bachelor of Science degree or the Diploma in General Studies who have not attended college previously may arrange to have their high school records forwarded to the Evening College on forms supplied to them on request to the college. Adults who have attended other colleges should request that their transcripts be forwarded directly to the Evening College.

MASTER OF
BUSINESS
ADMINISTRATION

The Evening College offers a graduate program leading to the degree of Master of Business Administration. Established in 1962, the program is designed to provide the best possible education for men and women at the graduate level for careers in business. Through carefully selected substantive materials and an analytical approach to the practice of management, the program is designed to enable college graduates to supplement job experience in preparing for positions of executive responsibility. The course of study emphasizes administrative decision-making rather than details of initial positions in business. Qualified students may take advantage of the program while remaining in their present business activities and continuing to gain experience through evening programs of study. In offering the program, the Evening College seeks to broaden its services to the local community and to provide university education for adults at an additional level of formal study.

The curriculum consists of 30 semester hours of credit. Details of the curriculum, tuition and admissions requirements will be found in the Evening College Catalog.

EVENING
COLLEGE
CATALOG

Detailed information about the Evening College is contained in a special catalog which may be received on request from the director of the Evening College.

DEPARTMENTS AND COURSES



Departments and Courses

DEPARTMENT FACULTIES The staff of each department is listed by rank and by alphabetical order within rank. Department chairmen are normally listed first. Further information concerning the faculty is listed in the section, "Directories."

DEPARTMENT PROGRAMS Each department offers information concerning its undergraduate offerings and requirements as well as the offerings and requirements concerning graduate study, if a graduate program is offered. For further information concerning a major field of study, students should consult their faculty advisers or major department chairmen.

DEPARTMENT COURSES The course offerings of each department are listed in their numerical sequence. The announced courses are subject to modification and change.

Some departments offer readings or special projects courses which may be entered with the permission of the instructor concerned. No student, however, may register for more than eight semester hours of such courses during a given semester or for more than twenty-four semester hours of such courses during his college career.

COURSE NUMBERING SYSTEM Each course is indicated by number and title. A course number, unmodified by "a" or "b" indicates a year-course, one which continues through two semesters of an academic year. A course number followed by an "a" refers to a half-course usually offered in the first semester. A number followed by a "b" refers to a half-course usually offered in the second semester.

Two-semester courses are divisible unless an explicit statement of indivisibility appears in the course statement. Courses which are indivisible normally require the successful completion of the first semester as a prerequisite to entering the second semester, and students who register for an indivisible course must complete the second semester of the course before receiving credit for the first.

COURSE SEQUENCE Courses are arranged, in general, in sequence progressing from elementary to advanced courses.

Courses which are *opened to freshmen* are designated by the letter "F" before the course number.

Courses which are *primarily for undergraduates* are designated by numbers beginning with the numeral 1.

Courses for *advanced undergraduates and graduate students* are designated by numbers beginning with the numeral 2.

Courses which are *primarily for graduate students* are designated by numbers beginning with the numeral 3.

ORDER OF
DEPARTMENTS
AND
OFFERINGS

The listing on the following pages is as follows:

Biology	History, Government and
Biomedical Engineering	International Relations
Chemistry	Linguistics
Classics	Mathematics
Comparative Literature	Music
Economics	Philosophy
Education	Physics
English	Psychology
Fine Arts	Romance Languages
Geography	Russian
Geology	Sociology
German	

Biology

DEPARTMENT FACULTY

Vernon Ahmadjian, Ph.D., *Professor of Botany, Acting Chairman*

Rudolph F. Nunnemacher, Ph.D., *Professor of Zoology**

Werner P. Koella, M.D., *Professor (Affiliate) of Neurophysiology*

Warren Litsky, Ph.D., *Professor (Affiliate) of Microbiology*

Harris Rosenkrantz, Ph.D., *Professor (Affiliate) of Biochemistry*

Joseph C. Curtis, Ph.D., *Associate Professor of Zoology*

David G. Moulton, Ph.D., *Associate Professor of Physiology*

John T. Reynolds, Ph.D., *Associate Professor of Microbiology*

George Camougis, Ph.D., *Associate Professor (Affiliate) of Physiology*

Ian D. K. Halkerston, Ph.D., *Associate Professor (Affiliate) of*

Endocrinology

Harry L. Jacobs, Ph.D., *Associate Professor (Affiliate) of Physiology*

Fernand G. Peron, Ph.D., *Associate Professor (Affiliate) of*

Biochemistry; Director of Steroid Training Program

John J. Brink, Ph.D., *Assistant Professor of Biochemistry*

Helen G. Vassallo, Ph.D., *Assistant Professor of Zoology*

Linda Bartoshuk, Ph.D., *Assistant Professor (Affiliate) of Physiology*

*On leave of absence, 1967-1968.

UNDERGRADUATE PROGRAM

Biology 11 presents a comprehensive view which is prerequisite to all other courses in the department. A departmental major must take Biology 11, three advanced courses in biology, Chemistry 11, Physics 11, Mathematics 12 and at least one additional course in chemistry, physics or geology. Mathematics 12 does not count toward the fulfillment of the major requirements.

In addition, at least 36 semester hours of a major's program must be taken from courses outside the fields of biology, chemistry, geology, mathematics, physics, and psychology 160, 222, 328.

HONORS PROGRAM

An Honors Program is available to especially well qualified majors and encourages the student to engage in an independent research project during the senior year. Frequently the Honors Project is the continuation of research begun during the summer under the National Science Foundation Undergraduate Research Participation Program.

GRADUATE PROGRAM

The department offers courses leading to Master of Arts and Doctor of Philosophy degrees in specialized phases of bacteriology, biochemistry, botany, cytology, physiology and zoology. Admission to the graduate program assumes adequate preparation in the basic sciences, an overall undergraduate record of B or better, and satisfactory standing in the Graduate Record Examination. Tuition scholarships and Teaching Assistantships are available. More detailed information can be obtained by writing to the department chairman.

Master of Arts: The program usually requires three or four semesters of academic work, including participation in the Graduate Seminar—Biology 350, teaching experience, and research culminating in an acceptable thesis. Prior to or during the program the student must have a semester course beyond the introductory biology level in botany, zoology and physiology.

Doctor of Philosophy: The requirements are identical with those of the University and can be found in the catalog section on The Graduate School and includes teaching experience. The student's program is planned according to his needs with his program director.

TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

A Training Program for Steroid Biochemistry has been established at the University through the cooperation of the Departments of Biology and Chemistry with the Worcester Foundation for Experimental Biology with the support of the National Cancer Institute and the U. S. Public Health Service. Post-doctoral fellowships are available for persons possessing the Ph.D., M.D., or equivalent training. Further information may be obtained from the *Program Director, Dr. Fernand G. Peron.*

NEUROLOGICAL SCIENCES TRAINING PROGRAM

This program is supported by the U.S. Public Health Service and carries fellowships at both the pre- and post- doctoral level. Training is offered in Neurophysiology, Neuroanatomy and related areas. For further information contact the *Program Director, Dr. D. G. Moulton.*

COURSES

Note: Laboratory fees are charged for all courses where either a laboratory or a laboratory fee is indicated.

F11. GENERAL BIOLOGY.

Principles and problems of modern biology. This course, or its equivalent, is a prerequisite for all other courses in the department. Three lectures and one laboratory period per week. Open to freshmen. Indivisible. *Four semester hours each semester.* Staff.

12. VERTEBRATE MORPHOLOGY.

The year course is divided into thirds of which the first is concerned with comparative anatomy, the second histology and the final third embryology. Two lectures, two laboratories per week. *Four semester hours each semester.* Mrs. Vassallo

15b. SYSTEMATIC BOTANY.

Taxonomy and classification of flowering plants, with emphasis on New England flora. A collection of 100 plants is required as well as a two-day spring collecting trip to the Berkshires. Three lectures and one laboratory period per week. *Four semester hours.*

Mr. Ahmadjian.

17b. GENERAL ECOLOGY.

Introductory study of the distribution of plants and animals, their inter-relationships and adaptations to a wide variety of environments such as seashore, sand dunes, woodlands and ponds. Field trips to Mt. Monadnock and other areas of ecological interest will be taken during laboratory periods or on Saturday. Three lectures and one laboratory period per week. Usually offered during the summer. *Four semester hours.*

18b. GENETICS.

Principles and problems of genetics. *Three semester hours.*

19a. MICROBIOLOGY.

An introduction to the biology of microorganisms. Laboratory work will be concerned with an introduction to the methodology involved in the study of bacteria, algae and fungi. Prerequisites: Biology 11 and Chemistry 11 or their equivalents. Biology 137b or an introductory semester course in Physiology is recommended. Three lectures, one laboratory per week. *Four semester hours.*

Mr. Ahmadjian, Mr. Reynolds.

110b. EVOLUTION.

Not offered, 1967-68.

General principles. *Three semester hours.*

137b. CELLULAR BIOLOGY.

The cell as a structural and functional unit. Introduction to the physiochemical properties and metabolic roles of molecules and macromolecules of cellular origin. Discussion of the roles of the nucleus and cytoplasm in the regulation of cellular processes. Three lectures per week. Prerequisite: Biology 11. *Three semester hours.*

Mr. Curtis.

204a. LICHENOLOGY.

Taxonomy and physiology of lichens and isolated lichen components. Laboratory emphasis on special projects and field work. Three lectures and one laboratory period per week. Prerequisite: Biology 19a or consent of the instructor. *Four semester hours.*

Mr. Ahmadjian.

215a. INVERTEBRATE ZOOLOGY.

Not offered, 1967-68.

224a. NEUROANATOMY.

Not offered, 1967-68.

The structural and functional organization of the human central nervous system. Three lectures or demonstrations per week. Prerequisite: Biology 12 or consent of the instructor. *Three semester hours.*

Mr. Nunnemacher.

225a, b. ELECTRON MICROSCOPY.

Introduction to the principles of electron optics, use of the electron microscope, preparation of specimens and the techniques of electron microscopy applicable to biological investigations. Two lectures and two laboratory periods per week. Prerequisites: permission of the instructor. *Four semester hours.*

Mr. Curtis.

231b. BACTERIAL PHYSIOLOGY.

Lecture topics and laboratory exercises selected to demonstrate chemical and physical principles underlying bacterial activities. Two lectures and two laboratory periods per week. Prerequisites: Biology 232b and consent of the instructor. Biology 240a is recommended. *Four semester hours.*

Mr. Reynolds.

232b. BACTERIOLOGY.

The biology of the bacteria and certain related forms. Prerequisites: Biology 19a and Chemistry 13 or their equivalents. Three lectures and one laboratory per week. *Four semester hours.*

Mr. Reynolds.

240a. GENERAL PHYSIOLOGY.

Introduction to the physical and chemical phenomena underlying the functions common to living organisms. Two lectures and two laboratory periods per week. Prerequisites: Biology 11, Chemistry 11 and Physics 11. *Four semester hours.*

Mr. Moulton.

241a. ENDOCRINOLOGY.

Not offered, 1967-68.

General principles of vertebrate endocrinology. *Three semester hours.*

Mr. Halkerston.

242a. COMPARATIVE ANIMAL PHYSIOLOGY.

Not offered, 1967-68.

248b. SENSORY PHYSIOLOGY.

Not offered, 1967-68.

A seminar on the principles of organization and function of invertebrate and vertebrate sensory receptors. Prerequisite: Biology 240a. *Three semester hours.*

Mr. Moulton.

249b. NEUROPHYSIOLOGY.

Physiology of central and peripheral nervous systems, receptors and muscles, considered in both vertebrates and invertebrates. Three lectures and one laboratory period per week. Prerequisite: Biology 240a. *Four semester hours or consent of the instructor.*

Mr. Moulton.

257b. BIOPHYSICS.

Not offered, 1967-68.

Consideration of the physical properties of biological systems. Influence of various physical agents upon biological structure and function. Physical methods of analysis of biological macromolecules. Three lectures per week. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Curtis.

260a, b. SPECIAL PROBLEMS.

Advanced semi-independent study of an approved topic under the direction of a departmental member. Consent of instructor required. Required for honors in biology. *Three or four semester hours.*

Staff.

268a. PRINCIPLES OF PHARMACOLOGY.

Not offered, 1967-68.

This course is intended to acquaint the student or research worker with established principles and the more important phenomena involved in the study of pharmacology. Particular emphasis is placed on the quantitative aspects of the interaction of chemical compounds or drugs with biological systems. The principal pharmacological actions of several important drugs are illustrated. *Three semester hours.*

270a, b. BIOCHEMISTRY.

The principles of mechanisms of biochemical reactions in an understanding of the metabolism of foodstuffs and the role of enzymes, nucleic acids and hormones. An acquaintance with the instrumentation in biochemical research will be presented. Prerequisite: Chemistry 13. Three lectures, one laboratory per week. *Four semester hours.*

Mr. Brink.

272a. METABOLIC PATHWAYS IN BIOCHEMISTRY.

Higher forms of animals including man are dependent upon the intake of certain essential nutritional substances for optimal growth and performance. These essential biochemicals occur in the chemical categories of amino acids, lipids, vitamins and minerals. The course will be concerned with a discussion of the biosynthetic pathways of these essential biological materials in those living systems, plant and animal, capable of producing them. In addition their biochemical importance in mammals will be stressed. Prerequisite: Bio. 270a, b. *Three semester hours.*

Mr. Rosenkrantz.

273b. SEMINAR IN NEUROCHEMISTRY.

The metabolic aspects of brain amines and biopolymers will be considered in relation to neural function. Effects of drugs on memory processes will be discussed in terms of biochemical mechanisms. Prerequisite: Biochemistry 270a, b. *Three semester hours.*

Mr. Brink.

281b. SEMINAR IN LICHENOLOGY.

An introduction to the literature and research techniques of experimental lichenology. Consent of instructor required. *Three semester hours.*

Mr. Ahmadjian.

300. READINGS AND RESEARCH IN BIOLOGY.

Three to four semester hours.

Staff.

325b. SEMINAR IN ULTRASTRUCTURE.

Discussion of the structure of macromolecules and subcellular organelles in relation to their biological functions. Evidence obtained by a variety of physical and chemical methods will be considered, particular emphasis being placed on electron microscopic studies. *Three semester hours.*

Mr. Curtis.

332a. SEMINAR IN BACTERIOLOGY.

Selected topics in bacterial ecology and physiology. Consent of instructor required. *Three semester hours.*

Mr. Reynolds.

341a. SEMINAR IN ENDOCRINOLOGY.

Three semester hours.

Mr. Curtis.

350. GRADUATE SEMINAR.

Staff.

355a. PROBLEMS IN BEHAVIORAL PHYSIOLOGY.

Topics will be chosen in which interdisciplinary substantive material and methods from

neuro-physiology, endocrinology, nutrition, sensory and regulatory physiology, and psychology (learning, modification, and sensation and perception) will be applied to simple behavioral systems in the whole organism. Prerequisite: Biology 240a. *Three semester hours.*
Mr. Jacobs, Miss Bartoshuk.

360. MASTER'S THESIS.

Staff.

390. DOCTORAL DISSERTATION.

Staff.

Biomedical Engineering

The Program in Biomedical Engineering is a graduate program under the joint sponsorship of Clark University and Worcester Polytechnic Institute. The aim of the program is to combine the resources of the two institutions to provide special education in this rapidly developing interdisciplinary area. Students entering the program must have a bachelor's degree in mathematics or one of the basic or engineering sciences. The master's program will include a minimum of five full courses taken at both institutions. All students will be expected to achieve some basic knowledge in biology, chemistry, engineering, mathematics and physics. Since a thesis on research is also required, the program will normally require at least two years of study. In general, the requirements for the degree will be consistent with the requirements for a master's or doctoral degree at both institutions. The detailed requirements for each student will be worked out by a Committee on Biomedical Engineering made up of faculty members from both institutions. Students enrolled at Clark will receive an M.A. or Ph.D. in Biology, the actual degree noting the cooperation of W.P.I. Conversely, students enrolled in the first instance at W.P.I. will receive the M.S. or Ph.D. in Biomedical Engineering, with the cooperation of Clark indicated on the degree.

For further information, write to: Dr. David G. Moulton, Director, Biomedical Engineering Program, Clark University, Worcester, Massachusetts 01610.

Chemistry

DEPARTMENT FACULTY

Gerson Kegeles, Ph.D., *Professor of Chemistry***

Edward N. Trachtenberg, Ph.D., *Associate Professor of Chemistry,*
*Department Chairman**

Wen-Yang Wen, Ph.D., *Associate Professor of Chemistry*

Allan M. Zwickel, Ph.D., *Associate Professor of Chemistry,*
Acting Chairman

Daeg S. Brenner, Ph.D., *Assistant Professor of Chemistry*

Karen L. Erickson, Ph.D., *Assistant Professor of Chemistry*

Paul T. Inglefield, Ph.D., *Assistant Professor of Chemistry*

*On leave of absence, 1967-68.

**On leave, second semester, 1967-68.

UNDERGRADUATE PROGRAM

In offering a variety of introductory courses in the major branches of modern chemistry, the department seeks to satisfy the needs and desires of (1) those interested in pursuing a career in chemistry, (2) those in related science areas, the proper understanding of which requires a background in chemistry, and (3) the non-scientists who want some knowledge of chemistry as part of their liberal education. In addition to these courses, a large number of more specialized subjects are treated in advanced courses.

The requirements for a major are Chemistry 13 with either 103 or 113a, 113b, 14a, 19 and 290a; Physics 11b or 12b and Mathematics 12; and four one-semester elective courses of which one must be in chemistry and the other three in mathematics beyond Mathematics 12, in physics beyond Physics 11 or 12 or in biology. In addition, all students must satisfactorily complete 36 semester hours outside courses in Group A, courses in statistics offered by any department, and courses in linguistics. (See pp. 41-42 for information on "Groups".)

Majors are urged to take Physics 130a, additional courses in mathematics and at least two years of German. Those who intend to do graduate work in chemistry are further advised to acquire a reading knowledge of either French or Russian.

An entering student with a sound background in chemistry is encouraged to take a placement examination given at the beginning of the academic year. Satisfactory performance on this examination can satisfy the Chemistry 11 prerequisite for Chemistry 13. This will permit completion of the requirements for the major no later than the junior and in some cases the sophomore year, leaving the student's senior year open for more sophisticated pursuits. Among these are the honors program and an Undergraduate Research Participation Program sponsored by the National Science Foundation.

GRADUATE PROGRAM

The department offers programs leading to the degrees of Master of Arts and Doctor of Philosophy with specialization in various fields of chemistry and in chemical physics. Entering students must take placement examinations in the basic areas of undergraduate instruction; these examinations are used solely for the purpose of arriving at a satisfactory program of courses. Up to one year's equivalent of teaching apprenticeship will be required of all candidates for advanced degrees.

The requirements for the Master's degree are essentially those of the University. The course requirements for the Ph.D. are as follows:

1. All students must demonstrate satisfactory performance (B— or better) in Chemistry 230a, 322a, 340b and 379b. Students specializing in organic chemistry may substitute 290a for 340b.

2. All students must demonstrate satisfactory performance (B— or better) in at least two of the following courses: Chemistry 212a, 242b, 280b, 321b, 323b, 333b, 335a, 361b and 369a.

3. Additional courses may be required by the student's research supervisor.

Qualifying and preliminary examinations must be passed, and the University language requirement must be met. Students not satisfying the University requirement in German but requiring it for their research may be asked to satisfy the department as to their proficiency in reading scientific German. For further details on formal requirements consult the appropriate departmental publications.

Graduate scholarships, teaching assistantships, research fellowships, NDEA fellowships and NSF and NASA traineeships are available. Further information on these awards may be obtained from the department chairman.

COURSES

F11. GENERAL CHEMISTRY.

Systematic study of the elements and their principal compounds and the fundamental laws and theories of chemistry. Three lectures and three laboratory hours per week. Laboratory fee. Divisible with consent of the instructor. *Four semester hours per semester.* Mr. Inglefield and Mr. Zwickel.

13. ORGANIC CHEMISTRY.

Three lectures per week. Chemistry 103 or 113a must be taken concurrently. Prerequisite: a grade of C— or better in Chemistry 11, or permission of instructor. *Three semester hours per semester.* Miss Erickson.

14a. ANALYTICAL CHEMISTRY.

Theoretical principles and technical methods employed in determining the composition of matter. Two lectures and six laboratory hours per week throughout the semester. Laboratory fee. Prerequisite: Chemistry 11. *Four semester hours.* Mr. Wen.

19. PHYSICAL CHEMISTRY.

Principles of physical chemistry applied to gases, liquids, solutions, crystalline solids; chemical thermodynamics, homogeneous and heterogeneous equilibria, electrolytic conductance and transference, electromotive force, reaction kinetics, colloids. Three lectures and three laboratory hours per week. Laboratory fee. Prerequisites: Physics 11b or 12b, Mathematics 12, a grade of C or better in Chemistry 11 or 13 or permission of instructor; Chemistry 13 and 14a may be taken concurrently. Additional course work in mathematics is recommended. *Four semester hours each semester.* Mr. Inglefield and Mr. Kegeles.

103. ORGANIC CHEMISTRY LABORATORY.

Laboratory study of the preparation and properties of important organic compounds. Four laboratory hours per week. Laboratory fee. Must be taken concurrently with Chemistry 13. *One semester hour per semester.* Miss Erickson.

113a. ACCELERATED ORGANIC CHEMISTRY LABORATORY.

Essentially identical to Chemistry 103. One hour conference and seven hours of laboratory per week. Laboratory fee. Must be taken concurrently with Chemistry 13. Strongly recommended for Chemistry Majors; optional for others. *Two semester hours.*

Miss Erickson.

113b. QUALITATIVE ORGANIC ANALYSIS.

Laboratory study of the identification of organic compounds by both classical and modern instrumental techniques. Laboratory fee. Prerequisites: Chemistry 113a or consent of the instructor, and Chemistry 13 concurrently or previously. One hour conference and 7 hours of laboratory per week. Required for Chemistry Majors. *Three semester hours.*

Miss Erickson.

212a. INORGANIC CHEMISTRY.

Theoretical and descriptive inorganic chemistry. Not open to those who have taken 14a during the period 1962-1965. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Zwickel.

214. SPECIAL PROJECTS.

Individual work of an investigative nature which may include a search of chemical literature as well as laboratory work. *Three semester hours each semester.*

Staff.

215. HONORS COURSE.

Primarily for majors seeking departmental honors in chemistry. A laboratory research project. *Three semester hours each semester.*

Staff.

230a. PHYSICAL ORGANIC CHEMISTRY.

Not offered, 1967-68.

Fundamentals of organic chemistry. Molecular structure, acidity and basicity, kinetics and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisites: Chemistry 13 and 19 or consent of the instructor. *Three semester hours.*

Mr. Trachtenberg.

242b. NUCLEAR AND RADIOCHEMISTRY.

Fundamentals of nuclear science; production, isolation, identification and measurement of radioactive atoms. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Brenner.

280b. INSTRUMENTAL METHODS.

The principles and application of modern instrumental techniques to the separation and analysis of mixtures and for the characterization of pure compounds. Two lectures and six laboratory hours per week. Laboratory fee. Prerequisite: consent of the instructor. *Four semester hours.*

Mr. Brenner.

290a. ADVANCED PHYSICAL CHEMISTRY.

Elementary quantum-mechanical treatment of the structure of nuclei, atoms and molecules. Statistical mechanics of simple systems. Three lectures per week. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Brenner.

300. RESEARCH.

Three to fifteen semester hours each semester.

Staff.

321b. COLLOID CHEMISTRY.

Not offered, 1967-68.

Osmotic and sedimentation equilibrium. Diffusion, sedimentation velocity, countercurrent distribution and chromatographic theory. Kinetics of rapid macromolecular interactions. Offered in alternate years. *Three semester hours.*

Mr. Kegeles.

322a. THERMODYNAMICS.

Applications of classical thermodynamics to chemical systems. *Three semester hours.*

Mr. Kegeles.

323b. STATISTICAL MECHANICS.

Statistical mechanical analogs of thermodynamic functions and their application to chemical systems. Prerequisites: Chemistry 290a and 322a, or their equivalents. *Three semester hours.*

Mr. Wen.

324b. REFRACTOMETRIC TECHNIQUES.

Not offered, 1967-68.

Applications of refractometric and interferometric methods to the study of optically inhomogeneous media. Methodology employed in electrophoresis, ultracentrifugation, diffusion and chromatography. Offered in alternate years. *Three semester hours.*

Mr. Kegeles.

331b. ADVANCED PHYSICAL ORGANIC CHEMISTRY.

Not offered, 1967-68.

Modern interpretation of organic reaction mechanisms including molecular rearrangements, chain reactions and other reactions not covered in Chemistry 230a. Prerequisite: Chemistry 230a. Offered in alternate years. *Three semester hours.*

Mr. Trachtenberg.

333b. SYNTHETIC ORGANIC CHEMISTRY.

Not offered, 1967-68.

Lectures on synthesis of organic molecules emphasizing scope and limitations of general methods, mechanism and stereochemistry. Synthesis of carbon to carbon bonds, oxidation and reduction. Prerequisite: Chemistry 230a, or consent of the instructor. Offered in alternate years. *Three semester hours.*

Mr. Trachtenberg.

335a. NATURAL PRODUCTS.

The chemistry of selected naturally occurring compounds. Structure determination, synthesis, mechanistic interpretation of exotic transformations, and biogenetic theory. Prerequisite: consent of the instructor. *Three semester hours.*

Miss Erickson.

340b. QUANTUM CHEMISTRY.

Elementary quantum mechanics of simple systems, properties of wave functions, approximation methods for complex systems. *Three semester hours.*

Mr. Zwickel.

344a. SELECTED TOPICS IN ADVANCED NUCLEAR CHEMISTRY.

Discussion of current experimental and theoretical literature in nuclear reactions, fission, nuclear spectroscopy, or applications of nuclear methods to problems in geochemistry. Prerequisite: Chemistry 242b. *Three semester hours.*

Mr. Brenner.

350. SEMINAR.

Reports on research work and discussions of recently published work. No credit.

Guest Lecturers, Staff and Graduate Students.

360b. COORDINATION COMPOUNDS.

Chemical and physical properties of complexes, including theories of coordination, stereoisomerism, reaction mechanisms and solution stabilities. Offered in alternate years. *Three semester hours.*

Mr. Zwickel.

361b. MOLECULAR STRUCTURE.

Not offered, 1967-68.

Physical methods relevant to the determination of the structure of molecules (x-rays, electron diffraction, nuclear magnetic resonance, electronic properties, etc.). Prerequisite: consent of the instructor. Offered in alternate years. *Three semester hours.*

Mr. Zwickel.

369a. ELECTRONIC SPECTROSCOPY.

Introduction to the studies of ultraviolet and visible absorption spectra as well as emission spectra. Prerequisite: consent of the instructor. Offered in alternate years. *Three semester hours.* Mr. Wen.

379b. SPECIAL TOPICS.

Research seminars; reports by graduate students. *Three semester hours.* Staff.

380. RESEARCH CONFERENCE.

Informal reports of research work being done in the laboratory. No credit. Staff and Graduate Students.

Classics

DEPARTMENT FACULTY

Claude W. Barlow, Ph.D., *Professor of Classics*

UNDERGRADUATE PROGRAM

Undergraduate courses are provided for the acquisition of a reading knowledge of Greek and Latin and for the study of literary masterpieces in those original languages. Courses also are offered for the candidate who wishes to major in Latin. The major should include Latin 13 during the freshman year, three advanced Latin courses and three courses in related fields to be approved by the department. Other courses, given entirely in English, deal with phases of the Greek and Roman civilizations. Students who wish to elect Elementary Greek or Intermediate Latin should consult the department as far in advance as possible since these courses are not offered every year.

In addition, at least 36 semester hours of a major's program must be taken from other than Group C and Group D courses. (See page 41 concerning "Groups.")

COURSES

Greek

F11. ELEMENTARY GREEK.

Not offered, 1967-68.

Greek grammar through forms, syntax, vocabulary and reading; selections from Xenophon's *Anabasis* or other simple prose. Open to freshmen. Indivisible course. *Three semester hours each semester.*

12. ATTIC GREEK PROSE; HOMER'S *Iliad*.

Not offered, 1967-68.

Prerequisite: Greek 11. *Three semester hours each semester.*

13. GREEK DRAMA.

Prerequisite: Greek 12 or the equivalent. *Three semester hours each semester.* Mr. Barlow.

123a. GREEK CIVILIZATION.

Lectures, readings and discussion on the history, literature, art, religion and government of ancient Greece, with emphasis on the elements which have contributed most to Western civilization. Given in English. *Three semester hours.* Mr. Barlow.

Latin

F11. ELEMENTARY LATIN.

Not offered, 1967-68.

Three semester hours each semester.

12. INTERMEDIATE LATIN; VIRGIL'S *Aeneid*. Not offered, 1967-68.
This course will begin with an intensive review of forms, syntax and vocabulary for at least seven weeks. Prerequisite: two years of secondary school Latin. Offered in alternate years. *Three semester hours each semester.*
- F13. CATULLUS AND PLAUTUS; TERENCE AND HORACE.
Prerequisite: Latin 12 or three years of secondary school Latin. *Three semester hours each semester.* Mr. Barlow.
15. ROMAN HISTORIANS; ROMAN SATIRE. Not offered, 1967-68.
Prerequisite: Latin 13. *Three semester hours each semester.*
17. ROMAN PHILOSOPHERS; POETS OF THE AUGUSTAN AGE. Not offered, 1967-68.
Three semester hours each semester.
19. SURVEY OF LATIN LITERATURE.
Three semester hours each semester. Mr. Barlow.
- F123b. ROMAN CIVILIZATION.
Lectures, readings and discussion on the history, literature, philosophy, art, religion, law and government of ancient Rome, with emphasis on the transmission of Greek civilization and the condition of the Roman Empire during the early years of Christianity. Given in English. *Three semester hours.* Mr. Barlow.

Comparative Literature

18. LITERATURE AND THE NATURE OF MAN.
The course is designed to serve the general student by providing him with an opportunity to investigate ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representatives of the cultures of which they are products. The course is planned not only to introduce the student to a body of knowledge and experience held in common by educated men and women in our society but also to help him to clarify his thinking concerning certain basic problems and to develop attitudes that are both humane and creative. The subject matter undertaken includes Sophocles' *Oedipus the King*, the *Book of Job*, the *Inferno* from Dante's *Divine Comedy*, Shakespeare's *King Lear*, Milton's *Paradise Lost*, Moliere's *Misanthrope*, Goethe's *Faust*, Part I, and selected poems of T. S. Eliot. All non-English works are read in translation. Classified as a Group C course. Open to sophomores, juniors and seniors with the consent of the instructors. Successful completion of the first semester is normally required for admission to the second semester. *Three semester hours each semester.* Mr. Anderson, Mr. King.
- ENGLISH 127b. MODERN CONTINENTAL DRAMA.
A survey of the drama of continental Europe, excluding England, from Ibsen to the drama of the absurd. Special emphasis will be given to the major figures, including Ibsen, Strindberg, Chekhov, Pirandello and Brecht. Offered in alternate years. *Three semester hours.* Mr. Schroeder.
- ENGLISH 245b. MODERN CONTINENTAL FICTION. Not offered, 1967-68.
Selected masterpieces by modern European novelists are studied closely in English trans-

lation, with attention to their philosophical, moral, social, political and psychological insights as well as to their literary forms. Writers considered include Flaubert, Turgenev, Tolstoy, Dostoyevsky, Gide, Proust, Mann, Kafka and Camus. Students are encouraged to read in the original languages when possible. Prerequisite: consent of the instructor. Offered in alternate years. *Three semester hours.* Mr. Beard.

GERMAN 197a. THE FAUST THEME IN LITERATURE.

See description under German.

Mr. Arndt.

GERMAN 199. THE GERMAN CONTRIBUTION TO WORLD LITERATURE.

See description under German.

Mr. Arndt.

RUSSIAN 179. SURVEY OF RUSSIAN LITERATURE.

See description under Russian.

Not offered, 1967-68.

Mrs. Sorokin.

RUSSIAN 180. SOVIET LITERATURE.

See description under Russian.

Not offered, 1967-68.

Mrs. Sorokin.

Economics

DEPARTMENT FACULTY

Roger C. Van Tassel, Ph.D., *Professor of Economics, Department Chairman*

James A. Maxwell, Ph.D., *Professor of Economics, Emeritus*

F. Eugene Melder, Ph.D., *Professor of Economics*

Howard W. Nicholson, Ph.D., *Professor of Economics*

Frederick W. Bell, Ph.D., *Associate Professor of Economics*

George E. Hargest, M.B.A., *Associate Professor of Economics*

Sang C. Suh, Ph.D., *Assistant Professor of Economics**

Donald T. Savage, Ph.D., *Assistant Professor of Economics*

Herrington J. Bryce, Ph.D., *Assistant Professor of Economics*

Constantine N. Michalopoulos, Ph.D., *Assistant Professor of Economics*

James W. Wightman, Ph.D., *Assistant Professor (affiliate) of Economics*

Albert J. Sargent, M.A., *Lecturer in Economics*

*On leave of absence, 1967-68.

UNDERGRADUATE PROGRAM

The first aim of the department, in its undergraduate courses, is to give the student a comprehensive grasp of the underlying principles and functions of economic institutions, and to develop habits of systematic thought about these institutions. Economics 11 is a prerequisite to all other courses in Economics. Majors in Economics are required to take Economics 205a, Intermediate Economic Theory, and Economics 205b, National Income Analysis and are strongly advised to take Economics 160, Introduction to Statistical Method. Undergraduate majors in economics may choose, in accordance with their interests and needs, from a variety of courses within the department and from related courses in other departments. Students planning on graduate study in Economics are advised to

elect courses in Economic Theory, Statistics and Econometrics, and Mathematics. Students interested in graduate study in Business Administration are advised to elect courses in Accounting, Statistics, and Econometrics, and those courses in Economics concerned with the application of economic analysis to business problems. Some additional courses in Economics and Business offered in the Evening College may be counted toward the major with the approval of the department chairman.

In addition, at least 36 semester hours of a major's program must be selected from other than the following fields or courses: geography, history, government, international relations, sociology, mathematics 11 and 12, and psychology 11 and 170b.

Candidates for departmental honors will engage in a program of independent study consisting of reading and research designed in part to give them specialized training in the fields of their major interest and in part to supplement formal courses. Ordinarily a candidate will begin his honors work in the second semester of the junior year by enrolling in the Honors Seminar.

In making elections, students should bear in mind that some advanced courses may be offered only in alternate years.

GRADUATE PROGRAM

The University offers facilities for graduate study and research leading to the Master of Arts degree and Doctor of Philosophy degree in Economics for a small number of selected students.

Graduate students may elect to take a limited amount of work in related courses offered by other departments.

Scholarships and fellowships are available for a limited number of well-prepared students. These appointments exempt their holders from tuition fees and some carry stipends in varying amounts. Several teaching assistantships are also awarded which enable graduate students to gain experience in undergraduate instruction. These carry remission of tuition and a cash payment, up to \$2,000 for part-time work (one-half).

Master of Arts Program

The program for the degree of Master of Arts is worked out individually with each student.

An academic year of full-time study in residence, or its strict equivalent in summer sessions and part-time study, is a minimum requirement for a master's degree. Residence study is broadly defined as graduate work done at the University under the immediate personal supervision of at least one member of the University faculty. A program of full-time study is equivalent to twenty-four semester hours.

A student should discuss his plans with the department chairman on or before Registration Day and secure approval of his course program. Each M.A. candidate is required to take a course in Theory, Intermediate or Advanced, depending upon his background. In addition, each first year graduate student is required to enroll in the Department Seminar, which meets weekly throughout the year. The Seminar is equivalent in credit to a semester course. Several visiting economists present papers each semester.

A Master's thesis will be written on a topic in the field of the student's special interest under the supervision of a member of the Department. Each student should be sure to enroll for a thesis course at the beginning of his program. The thesis course is equivalent to six semester hours. This, added to the twenty-four semester hours of course

credit, gives the student the necessary thirty semester hours of credit for the M.A. degree.

Doctor of Philosophy Program

For the degree of Doctor of Philosophy in Economics, each student must choose five fields of study to be agreed upon as early as possible in the first year of residence beyond the M.A. A range of courses is offered in cycles of two or three years.

Two full academic years of graduate work, or its equivalent in part-time work, is necessary for admission to Ph.D. candidacy. One of these years must be spent in residence at Clark University. In residence is broadly defined as work done at Clark University under the immediate personal supervision of at least one member of the University faculty. For the degree of Doctor of Philosophy, twenty-four semester hours is a normal full-time program.

All Ph.D. candidates will be required to demonstrate proficiency in Economic theory (micro, macro, and doctrine) and in Econometrics. In addition, Ph.D. candidates will be required to demonstrate a thorough knowledge of three of the following fields: Money and Banking, Public Finance, Industrial Organization and Government Control, International Trade, Labor, Economic Growth, Regional Economics or one field selected from related subjects.

Each student should decide, with the advice and approval of the Department Chairman, what he will offer for his language requirement. A prospective candidate must pass a University language requirement—i.e. a reading examination in French, German, Russian or Spanish. In addition he must complete a Departmental requirement in a second language or preferably in Mathematics—i.e. offer one of the following: (a) pass a reading examination in French, German, Russian or Spanish; or (b) satisfactorily complete a program in Mathematics for Economists given by the Department. The option made by the prospective candidate must be reported to the Dean of the Graduate School not later than November 1st of his second year of graduate work.

After completing at least three semesters of graduate work and passing one language requirement, upon application, a student may take a six-hour written examination in Economic Theory and its history. The written examination is regularly scheduled by the Department twice during an academic year; normally in September and March. After the preliminary written examination has been passed and all language and other requirements have been completed, a two-hour oral examination will be held covering three of the candidate's fields. Unless the dissertation field is Quantitative Analysis, this field must be one of the three offered at the preliminary oral. In the preliminary examination, the student is expected to demonstrate scholarly ability by: (a) such discussion of the subject matter and the major problems of each field as to show not only knowledge of content but capacity for interpretation, and (b) appreciation of the kinds of primary sources available and serviceable knowledge of reference works and the principal secondary sources. The preliminary oral should, if possible, be taken while the student is still in residence, and in no case be delayed long thereafter.

Admission to candidacy should follow closely upon the passing of the preliminary examinations, and active research for the dissertation should begin as soon as practicable.

The fifth or reserve field is the one in which the student writes his dissertation. The dissertation must be a real contribution to knowledge, based upon independent research, convincingly presented, and acceptably written.

The final oral examination will cover the dissertation and the special field in which it lies. In this examination, the student is expected to display thorough and expert knowledge of the subject, including acquaintance with primary sources and monographs, as well as general bibliography. A student who has not completed a successful defense of the dissertation within five calendar years of having passed the preliminary oral examination must re-pass the preliminary oral before being permitted to take the final oral. Some teaching experience at Clark, or such other teaching as the Department may regard as equivalent, is prerequisite to the Doctor's degree.

COURSES

F11. PRINCIPLES OF ECONOMICS.

Open to freshmen. *Three semester hours each semester.*

Mr. Van Tassel.

F100. INTRODUCTION TO ACCOUNTING.

Approaching accounting as an analytical tool, the accounting cycle and the resulting financial and fund flow statements are developed for service, merchandising and manufacturing enterprises within the context of the various forms of business organization. *Three semester hours each semester.*

Mr. Hargest.

102. INTERMEDIATE ACCOUNTING.

Accounting theory and procedures and their application to asset, liability and proprietorship accounts. Analysis of financial statements, including statements from incomplete data and the statement of application of funds. Emphasis is on problem analysis and solution. Indivisible course. Prerequisite: B.A. 100. *Three semester hours each semester.*

Mr. Hargest.

120a. CORPORATION FINANCE.

Not offered, 1967-68.

Financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control. Prerequisite: Economics 11. *Three semester hours.*

121b. INTRODUCTION TO INVESTMENTS.

Not offered, 1967-68.

Principles underlying investment analysis and policy; salient characteristics of governmental and corporate securities; policies of investment companies and investing institutions, relation of investment policy to money markets and business fluctuations; security price-making forces, construction of personal investment program and exchange operation. Prerequisite: Economics 120a. *Three semester hours.*

13a. MONEY AND BANKING.

Three semester hours.

Mr. Savage.

140b. CONSUMER ECONOMICS.

Theories of consumer choice making are analyzed. Rational planning and economy in important fields of consumers' decisions are explored. The role of government and private agencies in consumer education and protection are reviewed. *Three semester hours.*

Mr. Melder.

141b. ANALYSIS OF FINANCIAL STATEMENTS.

Interpretation and use of financial statements. The course is designed for those who may not have studied accounting, but nevertheless wish to learn something of the methods of the analysis, interpretation and use of financial statements. *Three semester hours.*

Mr. Hargest.

142a. HISTORICAL ANALYSIS OF ECONOMIC GROWTH.

Economic History of selected countries compared for periods preceding and during transition to modern economic organization. Comparisons are drawn from Europe, Asia, and North America. Prerequisite: Economics 11. *Three semester hours.* Mr. Melder.

142b. ECONOMICS OF UNDERDEVELOPED REGIONS.

An analysis of underdeveloped nations. Economic, cultural, social, and political factors that have an importance in economic development. Prerequisite: Economics 11. *Three semester hours.* Mr. Melder.

15a. PUBLIC FINANCE.

The principles of governmental expenditures, revenues, and debts, with particular reference to the United States. *Three semester hours.* Mr. Bryce.

160a. INTRODUCTION TO STATISTICAL ANALYSIS.

The theory and application of frequency distributions; measures of central tendency; dispersion; skewness and kurtosis. An introduction to probability theory; theoretical probability distributions; estimation by confidence interval; decision making rules and their power curves; acceptance sampling; quality control; analysis of variance; and other statistical tests of significance complete consideration of univariate distributions. Prerequisite: Mathematics 11 or equivalent. *Three semester hours.* Mr. Sargent.

160b. INTRODUCTION TO STATISTICAL ANALYSIS.

Problems are integrated with a systematic presentation of principles and methods. Topics include price and quantity indexes; seasonal trend and cycle analysis; linear and curvilinear regression and consideration of the stochastic (Ut) term. Finally, tests of statistical significance on the parameters of the regression equation are made. Prerequisite: Economics 160a. *Three semester hours.* Mr. Sargent.

184a. MANAGEMENT-LABOR RELATIONS.

Management-employee relationships with special reference to union and management bargaining. Opportunity for development of perspective and judgment regarding problems of management in shop industrial situations and labor relations law. Discussion and case methods are employed. Prerequisite: Economics 11. *Three semester hours.*

Mr. Melder.

200a. THEORIES OF ECONOMIC GROWTH.

An evaluation of the major elements in modern theories of economic development. Problems of measurement of economic growth and change. Prerequisite: Economics 205. *Three semester hours.*

Mr. Michalopoulos.

200b. ECONOMIC POLICIES FOR DEVELOPMENT.

Not offered, 1967-68.

Domestic and international trade policies for development. Theories and problems of economic planning. Prerequisite: Economics 200a. *Three semester hours.*

202. COST ACCOUNTING.

Not offered, 1967-68.

Basic principles of cost accounting as related to job order, process, estimated and standard cost systems. Cost for profit determination and managerial decision making are considered. Prerequisite: Economics 100. *Three semester hours.*

205a. INTERMEDIATE ECONOMIC THEORY.

An analysis of contemporary price theory. *Three semester hours.*

Mr. Bryce.

205b. NATIONAL INCOME ANALYSIS.

A study of contemporary income theory. *Three semester hours.*

Mr. Savage.

207a. INTERNATIONAL TRADE THEORY.

Emphasis is put on international value determination and the mechanisms for adjusting to international disequilibrium. Prerequisite: Economics 13 or 205. *Three semester hours.*

Mr. Van Tassel.

207b. INTERNATIONAL ECONOMIC POLICY.

A review of the rise of the world trading economy, techniques of commercial policy, and major questions of international economic policy. Prerequisite: Economics 207a. *Three semester hours.*

Mr. Michalopoulos.

210a. ECONOMIC AND SOCIAL REFORM.

Not offered, 1967-68.

The development of economic institutions by society in its attempt to solve basic economic problems by free enterprise or planning. Attention is given to the contemporary industrial organization of the American economy. *Three semester hours.*

211b. COMPARATIVE ECONOMIC SYSTEMS.

Not offered, 1967-68.

An analysis of contemporary or recently industrialized economic systems such as capitalism, socialism, and fascism, followed by a consideration of these systems as currently or recently found to exist in specific nations. *Three semester hours.*

22a. LABOR ECONOMICS.

A survey of the nature of labor economics and labor problems, including the several approaches of organized workers and employers to these problems. *Three semester hours.*

Mr. Melder.

22b. LABOR ECONOMICS.

Not offered, 1967-68.

Applications of economic analysis to wages, unemployment, and related issues. The approach of government to labor force problems, including industrial relations and social insurance. *Three semester hours.*

23b. PROBLEMS IN MONEY AND BANKING.

Central banks, particularly the Federal Reserve System; monetary standards; theories of foreign exchange; monetary policy in the United States. Prerequisite: Economics 13a or its equivalent. *Three semester hours.*

Mr. Savage.

24b. HISTORY OF ECONOMIC DOCTRINE.

After a quick survey of ancient writers, attention will be given to mercantilism and the doctrinal reaction from it as expressed by the Physiocrats and the Classical economists. *Three semester hours each semester.*

Mr. Nicholson.

25b. PROBLEMS IN PUBLIC FINANCE.

The Employment Act of 1946 is discussed and methods by which it may be implemented. Other questions examined are: reform of the federal taxation, federal debt policy, the capital budget, federal budgetary procedure. Prerequisite: Economics 15a or its equivalent. *Three semester hours.*

Mr. Bryce.

26a. INDUSTRIAL ORGANIZATION AND GOVERNMENT CONTROL.

Examination of the various forms of governmental regulation applied to our present industrial organization. Appraisal of existing governmental controls in specific industrial situations. *Three semester hours.*

Mr. Nicholson.

26b. PROBLEMS IN INDUSTRIAL ORGANIZATION.

Problems of market organization, behavior, and public policy. Conducted on a seminar basis. *Three semester hours.* Mr. Nicholson.

27. INTRODUCTION TO MATHEMATICAL ECONOMICS.

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Prerequisite: consent of the instructor. *Three semester hours each semester.* Mr. Nicholson.

270b. MATHEMATICAL ECONOMICS.

Not offered, 1967-68.

The course begins with the study of static micro economics including linear and non-linear programming, and input-output analysis. Next will be considered topics in general equilibrium, dynamic micro-theory and growth models. Some knowledge of calculus and linear algebra are assumed in the course. *Three semester hours.*

276b. MANAGERIAL ECONOMICS.

Not offered, 1967-68.

Economic concepts are analyzed and evaluated in terms of their applicability to the development of business policies. The criteria of usefulness are consistency of thought and measurability of the variables under consideration. Prerequisite: Economics 11. *Three semester hours.*

277a. REGIONAL ECONOMICS.

This course explores theoretical and practical aspects of economic development, cyclical changes and trade between regions of the United States. Location theory, growth trends, wage and income differentials, structural unemployment and inequalities in income distribution are considered for various states and metropolitan areas. Special emphasis will be given to interregional input-output tables, and tools used in economic projections for areas. Prerequisite: Economics 11, or one advanced economics course. *Three semester hours.* Mr. Bell.

277b. REGIONAL ECONOMICS.

A continuation of Regional Economics 277a. Emphasis on practical research problems. Further analysis of regional adjustment in a growing economy. Such current topics as defense spending, tax inequities and city planning will be explored. Prerequisite: Economics 277a. *Three semester hours.* Mr. Bell.

28. SENIOR HONORS.

Three semester hours each semester.

Staff.

280b. JUNIOR HONORS SEMINAR.

Designed to assist honors candidates in integration of the field. Prerequisite for honors. *Three semester hours.* Mr. Michalopoulos.

290a. ECONOMETRICS.

The application of statistical inference to the verification of economic postulates and problems. Topics considered are: classical least-squares, autocorrelation, matrix algebra, simultaneous equation estimating techniques, factor analysis, input-output matrices and decision theory. The course is designed to acquaint the student with a wide range of statistical tools which are directly applicable to research problems in economics and business. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Bell.

290b. PROBLEMS IN QUANTITATIVE ECONOMICS.

Study of the application of mathematical and statistical techniques to economic problems. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Bell.

301a. ECONOMIC THEORY—MICRO-ECONOMICS.

Analysis of consumer behavior; the theory of production; equilibrium of the firm and the industry; market structures, the pricing of factors of production; allocation of resources in a market economy; general equilibrium analysis; and introduction to welfare economics. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Michalopoulos.

301b. ECONOMIC THEORY—MACRO-ECONOMICS.

Income and employment theory; the Keynesian aggregative system and post-Keynesian systems; static equilibrium theory; an introduction to macrodynamics. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Savage.

311. DEPARTMENT SEMINAR.

Three semester hours.

Mr. Michalopoulos.

313a. MONEY AND BANKING THEORY.

The process of money creation and money flows; an analysis of the monetary and banking system, money and capital markets, and the role of financial intermediaries; analysis of monetary policy instruments and their effectiveness; competing objectives of monetary policy; relation of these objectives to fiscal policy, debt management, and economic growth. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Savage.

325. SEMINAR IN PUBLIC FINANCE.

A study of the theory of public finance, fiscal policy, institutional arrangements, and policy problems. Prerequisite: consent of instructor. *Three semester hours.* Mr. Bryce.

327. SEMINAR IN INTERNATIONAL TRADE.

The theory of international trade and finance. Problems in international economics with particular attention on international finance. Prerequisite: consent of instructor. *Three semester hours.* Mr. Van Tassel.

300. READING }
30. THESIS } IN ECONOMIC GROWTH.

Mr. Melder.

31. THESIS: IN MONEY AND BANKING.

Mr. Savage.

322. READING }
32. THESIS } IN LABOR.

Mr. Melder.

34. THESIS: IN PUBLIC FINANCE AND FISCAL POLICY.

Mr. Bryce.

326. READING }
35. THESIS } IN BUSINESS ORGANIZATION AND GOVERNMENT
CONTROL OF INDUSTRY.

Mr. Nicholson.

36. THESIS: IN INTERNATIONAL ECONOMICS.

Mr. Van Tassel.

329. READING }
37. THESIS } IN STATISTICAL METHODS.

Mr. Nicholson.

334. READING }
38. THESIS } IN HISTORY OF ECONOMIC THOUGHT.

Mr. Nicholson.

339. READING }
320. THESIS } IN ECONOMIC THEORY.

Staff.

Education

DEPARTMENT FACULTY

Vernon Jones, Ph.D., *Professor of Educational Psychology*
James M. Coffee, Ed.D., *Associate Professor of Education, Acting
Department Chairman*

Richard Gordon, Ph.D., *Assistant Professor of Education*
Arthur M. Kroll, Ed.D., *Assistant Professor of Education*
Karen C. Cohen, Ph.D., *Lecturer in Educational Psychology*
Marcia A. Savage, Ed.D., *Lecturer in Education*
William E. Topkin, Ed.D., *Lecturer in Education*
Theresa F. Cooney, M.Ed., *Lecturer in Education*
M. Evelyn Harriman, A.M. in Ed., *Lecturer in Education*

With the cooperation of Professor Reid of the Department of Romance Languages, Miss Hughes, Dean of Women, and visiting lecturers in special areas; Mrs. Ball, Instructor in Education and Guidance Counselor.

UNDERGRADUATE PROGRAM

The department encourages all students who may be interested in preparing for teaching to consult with some member of its staff as early in their careers at the University as convenient. The actual election of courses in education, however, should be postponed until the junior year. During the first two years, students should complete as many of the specific requirements for the degree of Bachelor of Arts as possible, and lay a broad foundation of scholarship in the subjects in which they wish to teach.

In conformity with its policy of emphasizing the importance of scholarly background in the preparation of teachers, the department offers its courses as electives, and not as an undergraduate major. This means that the students preparing to teach should elect their majors with careful attention to extensive preparation in areas in which they wish to teach.

Education courses at the undergraduate level are offered primarily with two purposes in mind: (1) to provide introductory instruction to students who plan to teach in public and private secondary schools, and who, in preparation for such teaching, plan a fifth year of study leading to the degree of Master of Arts in Education; and (2) to provide a program of courses in Education, building upon a strong academic background, for students who wish to enter teaching in the elementary schools upon receiving the B.A. degree.

For students desiring to enter elementary school teaching, a program has been developed whereby the election of at least 21 semester hours in education may be possible, including internship teaching in the first semester of the senior year. Since the amount of professional work in education forms so large a percentage of the program of study of such students in the junior and senior years, it is obvious that careful planning must be done throughout the college course to have the desired number of electives available for work in education in these last two years.

Seniors who stand in the highest third of their class may petition for permission to elect 300 level courses leading to secondary school teaching.

GRADUATE PROGRAM

The graduate program in education consists of two parts: a program leading to the degree of Master of Arts in Education, and another, leading to the degree of Doctor of Education.

Master of Arts in Education: For graduate students wishing to prepare for teaching and/or guidance in public or private secondary or elementary schools, the department offers a fifth-year program leading to the degree of Master of Arts in Education. The program may include additional work in the student's subject-matter field, courses and seminars in education and, in some cases, counseling, and supervised internship teaching.

Admission Requirements: In addition to the general admission requirements to the Graduate School, a personal interview is usually required by the Department of Education. Since scholarships are usually not available for the first semester to students applying for the Master of Arts in Education as a terminal program, the department is liberal in its policy concerning the date when applications will be considered.

Programs Available: Four programs leading to the degree of Master of Arts in Education are available:

1. A full-time program for students with a bachelor's degree and strong academic background. Superior students may complete this program in one year. It includes appreciable advanced work in the academic field in which the student plans to teach, and internship teaching as well as graduate courses in education.
2. A program of part-time study for teachers in service.
3. A study-teach program for specially selected applicants involving alternate semesters of full-time study and paid employment as a teacher. This is a two-year program and the teaching is a part of the requirements of all students in this study-teach plan.
4. A study-teach program in cooperation with the Department of Romance Languages, involving instruction in beginning college courses. This is a two-year program in which the student typically receives a Teaching Assistant Scholarship involving remission of tuition and a cash stipend. In this program, the intern devotes half-time to supervised teaching and other service to the Department of Romance Languages. In light of the extensive internship teaching experience in this program, the number of courses in education may be reduced to equal that in the subject matter field. The assisting or teaching is a part of the requirements of all students in T.A.S. Program. As part of the study of Romance languages and literature, the departments look with favor on study abroad for at least one summer, but this is not a requirement.

Course Requirements. The student is expected to elect one of the following groups of studies as the field in which he wishes to teach:

- (a) Mathematics and natural sciences.
- (b) History, geography, and government.
- (c) Ancient and modern foreign languages.
- (d) English, alone or in combination with some related subject.

Prior to receiving the degree, the candidate must have completed in undergraduate and graduate study combined not less than five year-courses in one of the above groups,

or in a combination of groups approved by the Department of Education. At least two semester-courses in a subject-matter field must be taken as a part of the study in residence for the advanced degree and must be passed with a grade of B— or better for graduate credit. In addition to the above requirement in the subject-matter field, eight semester-courses of graduate work in education will normally be required. The program of courses to meet these requirements must be approved in advance by the department. Changes in the proportion of education and subject-matter courses may be made by the department on the basis of the candidate's previous training. Work, additional to the above requirements, either in the subject-matter field or in education, or both, may be required if this seems necessary for the adequate preparation of the candidate.

Internship Teaching. The department provides opportunities for internship teaching under supervision for all graduate students majoring in education. For graduate students of the department who have not had teaching experience, satisfactory work in internship teaching is a requirement for the degree of Master of Arts in Education.

Thesis or Additional Study in Lieu of Thesis. All candidates for the degree of Master of Arts in Education must choose one of the following plans:

- (a) Prepare an acceptable thesis.
- (b) Elect, in lieu of thesis, two additional semester courses in subject-matter fields (making a total of at least four-semester courses in subject-matter area).
- (c) Elect, in lieu of thesis, a seminar in which intensive work will be required in preparing and presenting reports before fellow graduate students and a member of the staff.

Final oral examination. The passing of a final oral examination will be required of all candidates.

Doctor of Education: The program for the degree of Doctor of Education was established in 1962 with special emphases on educational psychology, guidance and counseling. The requirements for this degree will closely parallel the requirements for the Doctor of Philosophy degree, as outlined in the catalog section on the Graduate School. Applicants for admission to the program will be expected to give evidence of high scholarly achievement, including results of the Graduate Record Examination. In special cases, foreign students may be excused from the Graduate Record Examination requirement.

COURSES

20a. (GEOGRAPHY 200) GEOGRAPHY IN EDUCATION.

Geography in the present-day American schools. The course is designed to meet the needs of those expecting to teach geography. *Three semester hours.* Mr. Warman.

201a. EDUCATIONAL PSYCHOLOGY: CHILD GROWTH AND DEVELOPMENT.

Principles of child development, with special emphasis upon maturation, learning and personality development in the elementary school years. *Three semester hours.*

Miss Savage.

201b. EDUCATIONAL PSYCHOLOGY: ADOLESCENT GROWTH AND DEVELOPMENT.

Principles of adolescent development with special emphasis upon learning and personality development in the secondary school years. *Three semester hours.* Miss Savage.

203a. THE AMERICAN SCHOOL.

A comprehensive examination of education in America, with emphasis upon recent innovation. *Three semester hours.* Mr. Gordon.

204b. CURRICULUM DEVELOPMENT IN SECONDARY EDUCATION.

The basic objectives, issues, principles and procedures of curriculum organization and development in secondary schools, including the organization of learning experiences in reference to developmental and subject-matter sequences. Admission on consent of the Department. *Three semester hours.* Mr. Gordon.

208a. METHODS AND MATERIALS IN SECONDARY EDUCATION.

Methods and techniques used by the teacher in junior and senior high school teaching, and a survey of materials available. Admission on consent of the Department. *Three semester hours.* Mr. Gordon.

210b. PSYCHOLOGICAL APPROACH TO CITIZENSHIP DEVELOPMENT.

A study and evaluation of the theoretical formulations and experimental evidence on the problem of values as they relate to character and citizenship development among children and adolescents. Attention will be given both to activities in the schools and to other institutions and agencies in the community as they relate to values and conduct of youth. *Three semester hours.* Mr. Jones.

215a. INTERNSHIP TEACHING IN THE ELEMENTARY SCHOOL.

An intensive period of observation and practice in teaching under supervision in regularly organized classes in elementary school. Each student is assigned to a supervising teacher, under whom he or she works for 180 hours during the semester. The first week of this period is normally devoted to observation; the remainder of the time to teaching, under supervision. Lesson planning, pupil evaluation, and supervision of pupils in non-class activities are part of the requirements of each student. Admission on consent of the Department. *Three semester hours.*

Mr. Jones, Mr. Gordon, Mrs. Cooney, Mrs. Harriman and Supervising Teachers.

216a. SEMINAR ON INTERNSHIP TEACHING (Accompanying 215a).

Education 215a and 216a should be taken simultaneously. *Three semester hours.*

Mr. Gordon and Mrs. Cooney.

217a. INTERNSHIP TEACHING IN THE SECONDARY SCHOOL.

An intensive period of observation and teaching in the field or fields in which the student plans to teach in secondary school. Individual supervision is given by the department and by critic teachers in co-operating schools. Admission on consent of the Department. *Three semester hours.* Mr. Jones, Mr. Gordon and Supervising Teachers.

218a. SEMINAR ON INTERNSHIP TEACHING IN SECONDARY SCHOOL (Accompanying 217a).

Education 217a and 218a should be taken simultaneously. *Three semester hours.*

Mr. Gordon.

263a. METHODS AND MATERIALS IN TEACHING IN THE ELEMENTARY SCHOOL.

Methods and materials in the teaching of the language arts, in the middle grades, with special reference to reading. Particular emphasis will be given to provision for individual differences in teaching, and to the development of independent study skills. Field trips to selected schools will be arranged. Admission on consent of the Department. *Three semester hours.* Staff and Specialists.

260b. CURRICULUM DEVELOPMENT IN ELEMENTARY EDUCATION.

A study of the most essential materials and methods in elementary school instruction. Special attention will be given to the methods of teaching and learning in the social studies and mathematics, with brief units on the methods of cooperating most effectively

with special teachers in the arts. Lectures and demonstrations by visiting specialists will be provided on particular topics, and field trips will be arranged for classroom demonstrations of certain principles and procedures. Admission on consent of the Department. *Three semester hours.* Staff and Specialists.

270. (ROMANCE LANGUAGES 270) THE TEACHING OF ROMANCE LANGUAGES.

A practicum course for Teaching Assistant Scholars serving as first-year Interns in the Department of Romance Languages. This course will include a weekly lecture and readings, to provide a basis in the theory of applied linguistics; directed teaching in language courses; and a semi-monthly seminar for discussion of the relations between theory and practice. *Three semester hours each semester.* Mr. Reid and Staff.

271. (ROMANCE LANGUAGES 271) THE TEACHING OF ROMANCE LANGUAGES—ADVANCED.

A continuation of course 270 for second-year Interns. *Three semester hours each semester.* Mr. Reid and Staff.

276b. SEMINAR: EDUCATING THE CULTURALLY DISADVANTAGED.

Not offered, 1967-68.

Three semester hours.

Staff.

290b. PHILOSOPHY OF EDUCATION.

The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems. *Three semester hours.* Mr. Topkin.

305a. EDUCATIONAL SOCIOLOGY.

Not offered, 1967-68.

A study of social phenomena and their relationships to education. *Three semester hours.*

Staff.

305b. GROUP PROCESSES IN EDUCATION.

A study of group phenomena with emphasis upon the small group in teaching and counseling. *Three semester hours.* Mr. Kroll.

307a. PERSONALITY DEVELOPMENT IN TEACHING AND COUNSELING.

The role of personality theory and development in counseling and education with emphasis upon those theories which relate to the counseling process. *Three semester hours.* Mr. Kroll.

307b. PERSONALITY DEVELOPMENT IN TEACHING AND COUNSELING.

Psychological, social and cultural bases of personality development as they relate to teaching and counseling. *Three semester hours.* Mr. Kroll.

309b. SOCIAL LEARNING IN RELATION TO TEACHING AND COUNSELING.

The purpose of this course is to consider concepts of learning which contribute to an understanding of the development of social behavior. Principles of learning and teaching from the fields of social psychology and sociology will be studied within the context of the social environment. *Three semester hours.* Mr. Coffee.

311a. PRINCIPLES, PRACTICES, AND ORGANIZATION OF GUIDANCE.

A survey of guidance and personnel work. Principles bearing upon guidance and student personnel practices will be developed. Aspects of related fields will be reviewed sufficiently to indicate the scope and content of guidance and personnel work. The problem of organizing and administering a guidance program will form an important part of this course. *Three semester hours.* Mr. Coffee.

312a. GUIDANCE: COUNSELING.

Emphasis in this course will be upon the theory and methodology of counseling and upon the management of typical counseling problems. The diagnosis and referral of be-

havior disorders and related personality maladjustments will be considered. Case material will be presented and analyzed. (311a must be taken simultaneously or have been taken previously.) *Three semester hours.* Mr. Coffee.

312b. GUIDANCE: OCCUPATIONAL INFORMATION AND PLACEMENT.

The first part of this course will contain instruction and training in the use of occupational information in vocational guidance along with a consideration of the psychological and sociological factors related to occupational choice and job satisfaction. The second part will emphasize the organization of the placement service. *Three semester hours.* Mr. Coffee, Mrs. Ball and Mr. Kroll.

314a. TESTS AND EVALUATION.

The methods and problems involved in the evaluation of abilities, interests and achievement of children and youth. Attention will be given both to standardized instruments and to teacher-made tests of achievement. *Three semester hours.* Mr. Jones.

314b. TESTS AND EVALUATION: ADVANCED PROBLEMS.

The measurement and evaluation of aptitudes, attitudes, and personality with attention to the use of such measures in teaching and counseling. *Three semester hours.* Mr. Jones.

318a. INDIVIDUAL PSYCHOLOGICAL ASSESSMENT IN COUNSELING.

Three semester hours. Mrs. Cohen and Staff.

319a. STATISTICAL METHODS IN EDUCATIONAL EVALUATION AND RESEARCH, I.

Three semester hours. Mr. Jones.

319b. STATISTICAL METHODS IN EDUCATIONAL EVALUATION AND RESEARCH, II.

Three semester hours. Offered 1966-67. Mr. Jones.

320b. RESEARCH DESIGN AND STATISTICS

Three semester hours. Mr. Jones and Mrs. Cohen.

321a. EDUCATIONAL RESEARCH DESIGN AND METHODOLOGY, I.

Three semester hours. Mrs. Cohen.

321b. EDUCATIONAL RESEARCH DESIGN AND METHODOLOGY, II.

Prerequisite: 321a or its equivalent. *Three semester hours.* Mrs. Cohen.

322b. PRACTICUM IN GUIDANCE.

Three semester hours. Mr. Coffee.

325a. GUIDANCE: DEVELOPMENT AND USE OF INFORMATION IN DECISION-MAKING.

Not Offered, 1967-68.

The decision-making process is the central focus of this course. The place of information in this process is considered, as related to guidance and counseling. *Three semester hours.* Mr. Kroll.

326. ADVANCED PRACTICUM IN GUIDANCE AND COUNSELING.

Three semester hours each semester. Mr. Coffee.

334b. SEMINAR: ADVANCED TOPICS IN CAREER DEVELOPMENT THEORY.

Three semester hours. Mr. Kroll.

335a. ADVANCED THEORIES OF HUMAN LEARNING.

Three semester hours. Staff.

340. DOCTORAL SEMINAR.

Three semester hours each semester. Staff.

350. RESEARCH IN EDUCATION.

Individual direction of students in their research projects. *Three semester hours each semester.* Staff.

380b. DEPARTMENTAL SEMINAR ON CURRENT PROBLEMS.

Six semester hours. Staff.

GRADUATE READINGS AND THESIS COURSES

- | | | | |
|------|---|--|--------|
| 38. | } | DIRECTED READINGS IN EDUCATIONAL PSYCHOLOGY. | |
| 381. | | THESIS. | Staff. |
| 39. | } | DIRECTED READINGS IN COUNSELING. | |
| 391. | | THESIS. | Staff. |

English

DEPARTMENT FACULTY

William H. Carter, Jr., Ph.D., *Professor of English, Department Chairman*

Karl O. E. Anderson, Ph.D., *Professor of English*

James F. Beard, Jr., Ph.D., *Professor of English**

Israel J. Kapstein, Ph.D., *Visiting Professor of English*

Charles S. Blinderman, Ph.D., *Associate Professor of English**

Jessie C. Cunningham, A.M., *Associate Professor of English*

Neil R. Schroeder, Ph.D., *Associate Professor of English*

Stanley Sultan, Ph.D., *Associate Professor of English*

Serena S. Hilsinger, Ph.D., *Assistant Professor of English*

Arthur H. Martin, M.A., *Instructor in English*

Joel H. Roche, M.A., *Visiting Lecturer in English*

Michael D. True, Ph.D., *Visiting Lecturer in English*

*On leave of absence, 1967-68.

UNDERGRADUATE PROGRAM

English 10a or b, Introduction to Literature, is a prerequisite for all other literature courses in the English Department. All year-courses in English are divisible.

An undergraduate major in English and American Literature is expected to acquire a liberal education with a broad background in the arts and sciences. To do so, he should become familiar with several fields in the humanities, the social sciences, mathematics, and the sciences; and insofar as is possible he should attempt to achieve depth in at least one area outside his major field. At each registration period, the student should discuss his program with his adviser.

The English major consists of a minimum of thirty hours in literature courses taught in English, of which up to six hours may be taken outside the English Department (see Comparative Literature); English 12, 16, 17, 18, and 19 cannot be counted towards this requirement. In addition, the English major must take a minimum of twenty hours of related courses in other fields, as specified under *Related Courses* below. No student is permitted to take *more* than eighty-four hours in his major and related fields.

Literature Courses. The minimum thirty hours of literature courses required of the English major must include the following:

1. English 10a or b, taken preferably in the freshman year and no later than the sophomore year.
2. English 13a or b, preferably taken no later than the sophomore year.
3. Either English 14 or English 15, normally taken before the senior year.
4. A minimum of twelve hours in courses or seminars at the 200 level. English 250b may be taken in partial fulfillment of this requirement.

To make sure that students develop some historical perspective and an awareness of the range and variety of English and American literature, all English majors must include in their programs at least:

- a. three semester-courses dealing with literature written before 1700: English 15a, 112b, 201b, 202b, 204, and 213.
- b. three semester-courses dealing with literature written from 1700 to 1900: English 14, 15b, 111, 205, 210, and 217.

Several English seminars also meet this requirement, depending on the subjects. Since the topics for seminars vary from year to year, the seminars fulfilling either half of this requirement cannot be listed here by name.

Related Courses. The minimum twenty hours of related courses required of the English major must include the following:

1. Six or more hours of History, especially courses in English and American history.
2. Six or more hours of Philosophy, not including Philosophy 11.
3. Any selection from the following, but the student should endeavor to take courses from as many different fields as are necessary to give him the breadth to make his major meaningful and comprehensive:
 - a. Civilization Courses: Classics 123a and 123b, French 113, and German 141.
 - b. Fine Arts, with the exception of studio courses.
 - c. Linguistics 115.
 - d. Music.

As long as the student fulfills the requirements specified above, he is entitled to elect any combination of courses ranging from fifty to eighty-four semester hours in his major and related fields.

Courses Recommended Outside the Major and Related Fields

Like all undergraduates, the English major must elect at least thirty-six hours of courses *outside* his major and its related fields. These courses must be selected from the offerings of the following Departments: Biology, Chemistry, Economics, Education, Geography, Geology, German, Government and International Relations, Mathematics, Physics, Psychology, Romance Languages, Russian, Sociology. The following courses are especially recommended:

- a. Government 14, 15, and 254.
- b. Psychology 12b, 103b, 170b, 172a, 202a, and 209a and b.
- c. Sociology 12a, 13b, 14a, 15, and 24b.
- d. *Science and Mathematics.* Inasmuch as courses in science and mathematics give the student experience in areas of learning which have crucial influence on contemporary culture, every English major is strongly urged to take at least one year course in mathematics and one in science.

e. *Foreign Languages.* Every English major is strongly advised to acquire proficiency in at least one foreign language. In addition, those students who intend to go on to graduate school should be aware that a reading knowledge of French, German, and Latin is frequently required of doctoral candidates.

Honors Program. Qualified students may apply in the spring of their sophomore year to participate in the Honors Program in English. Honors Candidates take the Junior Honors Seminar in the second semester of their Junior Year and then as seniors carry on independent research, culminating in the writing of a thesis.

GRADUATE PROGRAM

The University offers a program leading to the Master of Arts degree in English. A limited number of scholarships providing tuition remission are available for superior students. The department also offers several teaching assistantships, involving half-time teaching and half-time study, with a stipend up to \$2200 plus the remission of tuition.

For the Master of Arts, the student must satisfactorily complete at least 30 semester hours of work, including English 300a (Introduction to Graduate Studies), English 250a (English Language), and at least one seminar. He must also write an acceptable master's thesis (which may count up to 6 of the required 30 semester hours), and he must pass a written Foreign Language Examination (in Greek, Latin, French, German, Italian, Russian, Spanish, or another foreign language approved by the English Department).

COURSES

F10a and b. INTRODUCTION TO LITERATURE.

This course will be taught in sections. All the sections will deal with the problems common to all the literary genres—such as the handling of diction, imagery, point of view, tone, and structure; but the reading assignments will vary, each section focusing on some concept or theme. Students will be permitted to make their own choices as far as possible. Offered both semesters. *Three semester hours.*

Staff.

F12b. SPEECH.

A fundamental course in public speaking which concentrates on practical experience in the most common types of speeches. Enrollment limited to fifteen students. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Schroeder.

I3a and b. INTRODUCTION TO POETRY.

A course introducing the student to a variety of critical approaches to poetry and affording extensive experience in reading, discussing and writing about individual poems. Attention is given to as many as possible of the chief kinds, functions and values of poetry. Offered both semesters. *Three semester hours.*

Mr. Carter, Mrs. Hilsinger.

14. ENGLISH NOVEL.

A study of the English novel from its beginning to the end of the nineteenth century. The first semester includes Defoe, Richardson, Fielding, Smollett, Sterne, Jane Austen, and three or four minor novelists. The second semester considers Scott, Thackeray, Dickens, George Eliot, James, Hardy, Conrad, and two or three minor novelists. Some emphasis is placed on the development of the novel as a literary form. *Three semester hours each semester.*

Mrs. Cunningham.

15. ENGLISH DRAMA.

A course in theatrical techniques and the literature of the major periods of drama in the English language. The first semester covers the religious drama of the Middle Ages and the drama of Tudor, Stuart, and Restoration England, including plays by Marlowe, Shakespeare, Jonson, Beaumont and Fletcher, Dryden, Congreve and Wycherley. The second semester covers eighteenth and nineteenth century English drama and the modern drama of England, Ireland and the United States. Included are plays by Sheridan, Goldsmith, Wilde, Shaw, Synge, Yeats, O'Casey and O'Neill. *Three semester hours each semester.*

First semester: Mr. Schroeder.

Second semester: Mr. Sultan.

16a. CREATIVE WRITING.

A course designed to cultivate and guide student work in the short story, the lyric poem, and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Prerequisite: a one-semester course in literature, which may be taken concurrently. *Three semester hours.*

Mr. Martin.

17b. CREATIVE WRITING: SECOND COURSE.

Open to students who have taken English 16a and to other students interested in writing verse. Prerequisite the same as for English 16a. *Three semester hours.*

Mr. Sultan.

F18a and b. EXPOSITORY WRITING.

This course is designed to help students improve their expository writing through the study and application of rhetorical methods. Diction, sentence structure, paragraph integrity, theme organization, logic, semantics, persuasion, the relationship of idea to expression and of expression to audience are among the matters analyzed. Offered both semesters. *Three semester hours.*

Staff

19b. INTERMEDIATE COMPOSITION.

This course is designed to help those who have already acquired competence in expository writing to improve their style and effectiveness through practical experience. Special emphasis will be placed on stylistics, techniques of persuasion, and methods of organization through the study of works of established essayists and the close analysis of student papers. Enrollment limited to fifteen students. Prerequisite: English 11 (discontinued) or English 18 (formerly English 19) and consent of the instructor. *Three semester hours.*

Mr. Schroeder.

111. AMERICAN LITERATURE.

Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the present. Authors read during the first semester include Sewall, Edwards, Franklin, Cooper, Poe, Hawthorne, Thoreau, Emerson, Melville and Whitman; during the second semester, Twain, Howells, Dickinson, Adams, Crane, James, Frost, Eliot, Faulkner and Hemingway. *Three semester hours each semester.*

Mr. Roche.

112b. ELIZABETHAN NON-DRAMATIC LITERATURE.

Elizabethan prose and poetry, excluding drama, will be considered in their cultural, intellectual, and literary context. Special attention will be devoted to the works of Sidney, Spenser, Shakespeare, Jonson and Donne; but many minor figures (Wyatt, Surrey, Nashe, Lyly, Greene, etc.) will also be considered. Offered at the discretion of the department. *Three semester hours.*

Mr. Martin.

127b. MODERN CONTINENTAL DRAMA.

A survey of the drama of continental Europe, excluding England, from Ibsen to the drama of the absurd. Special emphasis will be given to the major figures, including Ibsen, Strindberg, Chekhov, Pirandello and Brecht. Offered in alternate years. *Three semester hours.*

Mr. Schroeder.

128. THEATRE IN WESTERN CIVILIZATION.

A history of Western theatre from classical Greece to the present which includes a study of the origins of the theatre, the origin and development of the major theatrical genres (drama, mime, ballet, opera, etc.), the emergence of the national theatres of Western civilization, the history of theatrical methods and techniques (acting, theatre architecture, scene design, production methods, etc.), and the aesthetic, historical, philosophical, and sociological significance of theatre through the ages. The first semester will be a study of Western theatre through the Renaissance; the second semester will cover theatre from the late seventeenth century to the present. Offered at the discretion of the department. *Three semester hours each semester.*

Mr. Schroeder.

143b. MODERN BRITISH FICTION.

The course deals primarily with the work of four British writers of fiction during the twentieth century: Joyce, Lawrence, Woolf and Durrell. *Three semester hours.*

Mrs. Hilsinger.

144a. CONTEMPORARY AMERICAN FICTION.

A critical introduction to the best American fiction since about 1900, with emphasis on its aesthetic values, sociological insights, and philosophical implications. Authors read include Dreiser, James, Anderson, Fitzgerald, Hemingway, Wolfe, Faulkner and Mailer. *Three semester hours.*

Mr. Martin.

155b. JUNIOR HONORS SEMINAR.

Restricted to juniors who are candidates for honors in English. The purpose of the seminar is to prepare the student for the advanced independent study of literature. It comprises such subjects as the definition of genres, the nature of metaphor, alternative critical approaches to literature and the editing of texts. *Four semester hours.*

Mrs. Hilsinger.

201b. CHAUCER.

After a careful study of the Prologue to the *Canterbury Tales* to acquaint the student with the essentials of Middle English vocabulary, grammar and scansion, most of the *Canterbury Tales* and all of *Troilus and Cressida* are read more rapidly. The emphasis throughout is on Chaucer's literary skill and breadth of vision. *Four semester hours.*

Mr. Anderson.

202a. MEDIEVAL LITERATURE.

A study of the literature of Western Europe before 1500. The works read include epics such as *Beowulf*, *The Song of Roland*, *The Nibelungenlied*, and the *Njal's Saga*; historical writings and folk tales important in the development of the Arthur story; romances such as *Perceval*, *Tristan and Isolde*, and *Gawain and the Green Knight*; Dante's *Divine Comedy: Inferno*; selections from Chaucer's *Canterbury Tales*; popular ballads and other short poems, secular and religious. *Four semester hours.*

Mr. Anderson.

203a. SEMINAR: THE METAPHYSICAL POETS.

Not offered, 1967-68.

An intensive reading of the English metaphysical poets of the seventeenth century, with primary emphasis on Donne, Herbert, Crashaw, Marvell, and Vaughan. Offered at the discretion of the department. Prerequisite: consent of the instructor. *Four semester hours.*

Mr. Carter.

204. MILTON AND THE SEVENTEENTH CENTURY.

The first semester is devoted to a study of seventeenth century English literature exclusive of Milton and the Restoration Drama; that is, the metaphysical poets (Donne, Herbert, Vaughan); the seventeenth century lyric (Jonson, Herrick, Crashaw, Marvell); prose works by Bacon, Burton, Browne, Walton, Bunyan, Pepys and Evelyn; and in general, the rise of neo-classicism (Jonson, Hobbes, Dryden). The second semester considers in some detail the works of Milton and the Restoration Drama (Dryden, Etherege, Wycherley, Congreve, Farquhar). Offered in alternate years. *Three semester hours each semester.* Mr. Carter.

205. EIGHTEENTH CENTURY.

Not offered, 1967-68.

During the first semester, prose works such as Defoe's *Moll Flanders* and Swift's *Gulliver's Travels*, plays such as Gay's *Beggar's Opera* and Lillo's *London Merchant*, and the major poems of Pope and Swift are considered. During the second semester, prose works by Boswell and Johnson; novels by Richardson, Fielding, Smollet, Sterne; plays by Fielding, Goldsmith, Sheridan; and poetry by Thomson, Collins, Gray, Burns and Blake are studied. Offered in alternate years. *Three semester hours each semester.* Mr. Carter.

206a. SEMINAR: SPECIAL STUDIES IN RENAISSANCE DRAMA.

Not offered, 1967-68.

A seminar devoted to the intensive study of a small group of dramatists or a special dramatic problem of the Renaissance. Enrollment limited to graduate students and advanced undergraduates who are capable of independent work. Prerequisite: consent of the instructor. Offered at the discretion of the Department. *Four semester hours.*

207b. SEMINAR: THE CONCEPT OF TRAGEDY.

Through the study of approximately twenty plays, three novels, and a number of poems, from the Greek and Hebrew origins of Western Culture to the present time, this course analyzes the nature of tragedy, the changes which this concept has undergone, the relation of these changes to shifting views of man and the universe, and the significance of the study of tragedy to us today. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Anderson.

210. VICTORIAN LITERATURE.

Not offered, 1967-68.

A survey of Victorian literature through the major movements and figures of the age. In the first semester, Carlyle, Macauley, Mill and Newman are studied as representative spokesmen of prevailing ideological movements, such as Transcendentalism, Utilitarianism, Anglo-Catholicism; Tennyson and Browning are the major poets studied. In the second semester, the movements include Darwinism, Aestheticism and Imperialism; Huxley, Arnold, Pater, Ruskin, Wilde and Hardy are among the authors read. Offered in alternate years. *Three semester hours each semester.* Mr. Blinderman.

212a. SEMINAR: AMERICAN LITERARY RENAISSANCE.

Not offered, 1967-68.

This course will explore characteristic writings of Emerson, Thoreau, Hawthorne, Melville, and Whitman; consider their personal and literary interrelations; and seek to evaluate their artistic and cultural influences in the larger context of American society. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Beard.

213. SHAKESPEARE.

Approximately twenty plays, with supplementary critical essays, are read through the year as a basis for a study of Shakespeare's development as a dramatist and his changing attitude toward life. The second semester is devoted mainly to a careful analysis of

Hamlet, Othello, Lear, Macbeth and Antony and Cleopatra. Three semester hours each semester. Mr. Anderson.

214b. ENGLISH SEMINAR: DARWINISM.

Not offered, 1967-68.

This seminar, of an interdisciplinary nature, is devoted to the study of original and research materials elucidating the scientific, philosophical, religious and social dimensions of Darwinism. The course examines chiefly the survival of the fittest Darwinian ideas in English and American literature. It is limited to advanced students who are capable of independent work. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Blinderman.

217. LITERATURE OF THE ROMANTIC PERIOD.

First semester, 1967-68.

The first semester includes reading of prose works (essays and a Gothic novel), study of eighteenth century predecessors of the Romantic Movement, and exposure to background information; emphasis is placed upon the major poetry of the major Romantic poets: Blake, Coleridge, Wordsworth, Byron, Shelley, and Keats. The second semester will involve an investigation of Romantic Theory and a study of Continental and American Romantic Literature. Offered in alternate years. *Three semester hours each semester.*

Mr. Kapstein.

218b. SEMINAR: WILLIAM BLAKE.

An analysis of the poems and of a selection of the Prophetic Books of Blake, including some consideration of Blake as graphic artist. Offered at the discretion of the department. Prerequisite: consent of the instructor. *Four semester hours.*

Mr. Carter.

219b. SEMINAR: AUSTEN AND JAMES.

This seminar will be devoted to a study of the novel of manners as a reflection of society and as a work of art. Emphasis will be placed on relationships between the two authors in their handling of content, form, and method. Offered at the discretion of the department. Prerequisite: consent of the instructor. *Four semester hours.*

Mrs. Cunningham.

222b. SEMINAR: MODERN POETRY.

A course in English poetry during the forty-year period from the First World War to the death of Dylan Thomas and Wallace Stevens, with brief consideration of the precursors of the period. Yeats, Pound, Eliot, Auden, Frost, Stevens and Thomas are the principal poets studied. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Sultan.

225b. SEMINAR: TWENTIETH CENTURY AMERICAN LITERATURE.

The course will include readings and discussions of a significant group of twentieth century American writers, O'Neill, Eliot, Robinson, Frost, Hemingway, Faulkner, and Stevens, as artists and as representatives of tendencies and influences in American civilization. Prerequisite: consent of the instructor. *Four semester hours.* Mr. True.

231a. THE IRISH LITERARY REVIVAL.

Not offered, 1967-68.

A course in the inception, development and effect of the literary movement during the end of the last century and first decades of this one that created an Irish literature in English. Writers studied include Yeats, Joyce, Synge and O'Casey. The cultural, historical and political backgrounds of Anglo-Irish literature are also taken up. Offered at the discretion of the department. *Three semester hours.*

Mr. Sultan.

232a. SEMINAR: CONRAD, LAWRENCE AND JOYCE.

This course deals with the development and accomplishment in the genres of the short story and the novel of three major writers of fiction of the twentieth century. Class

reports and papers. Offered at the discretion of the Department. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Sultan.

235a. SEMINAR: BLOOMSBURY GROUP.

This seminar will consider the aesthetic and social theories expressed in the novels of Virginia Woolf and E. M. Forster and in the essays of these and other members of the Bloomsbury Circle. Offered at the discretion of the department. Prerequisite: consent of the instructor. *Four semester hours.* Mrs. Hilsinger.

245b. MODERN CONTINENTAL FICTION.

Not offered, 1967-68.

Selected masterpieces by modern European novelists are studied closely in English translation, with attention to their philosophical, moral, social, political and psychological insights as well as to their literary forms. Writers considered include Flaubert, Turgenev, Tolstoy, Dostoyevsky, Gide, Proust, Mann, Kafka and Camus. Students are encouraged to read in the original languages when possible. Offered in alternate years. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Beard.

246b. INTRODUCTION TO LITERARY CRITICISM.

Not offered, 1967-68.

This course involves the discussion of a selection of critics, from Aristotle to the present, who have been particularly influential in English and American literature. Offered at the discretion of the department. *Three semester hours.* Mr. Carter.

250a. ENGLISH LANGUAGE.

A one-semester, introductory, survey course in the history and nature of the English language. The first part will be devoted to a study of metalinguistics (the relationship between thought and language, the relationship between reality and language), of the origin of the spoken language and the alphabet, and of the Indo-European family of languages. The major part of the semester will focus on the origin and development of English: military and linguistic invasions of England, morphological and other changes in the language, lexicography, grammars of English, usage, etymology. Concluding part of the semester will consider the nature of contemporary English (including jargon, slang, different styles) and semantics. Prerequisite: consent of the instructor. *Four semester hours.* To be announced.

300a. INTRODUCTION TO GRADUATE STUDIES.

This course is devoted to an intensive general study of the three principal areas in the discipline—bibliography and textual analysis, literary history, and literary criticism—and to the relationships among them. In the study of literary criticism, alternative theoretical approaches and applications of them are examined. *Four semester hours.* Mr. Sultan.

GRADUATE READING AND THESIS COURSES

31. } READING COURSE.
310. } MASTER'S THESIS.

Staff.

Fine Arts

DEPARTMENT FACULTY

Samuel P. Cowardin, III, Ph.D., *Associate Professor of Fine Arts,
Department Chairman*

Sante Graziani, M.F.A., *Associate Professor (affiliate) of Fine Arts*

John T. Murphey, B.S. in Ed., *Assistant Professor of Fine Arts*

UNDERGRADUATE PROGRAM

The department offers a selection of courses designed to foster understanding and sensitivity in the visual arts through direct contact with the materials of art or the study of artistic achievement in a variety of areas and historical periods. The major in fine arts is offered in conjunction with the School of the Worcester Art Museum. All advanced studio courses at the museum are designated as Fine Arts 199. They are described in the catalog of the School of the Worcester Art Museum. The major comprises at least thirty-six credit hours of studio work at the museum, plus Fine Arts 11 and six additional hours chosen from one or more of the following areas: History 10, Music, Philosophy 13b and Psychology 11. To meet the requirements for the bachelor's degree, all majors must satisfactorily complete 36 semester hours outside courses in studio art and art history; European civilization (French, German, Classical); Music; History 10; Literature; Philosophy 13b; and Psychology 11.

Every candidate for admission who plans to major in fine arts must submit with his application form a portfolio of at least fifteen pieces of representative art work directly to the Registrar of the School of the Worcester Art Museum. Each piece should be clearly marked with the candidate's name and home address.

COURSES

F11. INTRODUCTION TO WESTERN ART.

Lectures during the first four weeks deal with general topics such as design principles and technical procedures. The remainder of the course treats significant works of architecture, sculpture, and painting in the light of their times. Open to freshmen. First semester prerequisite to the second. *Three semester hours each semester.* Mr. Cowardin.

F12b. SURVEY OF WESTERN PAINTING.

General problems of pictorial expression are treated as well as the historical aspects of style. May not be counted in addition to the second semester of Fine Arts 11. Limited to freshmen and sophomores. *Three semester hours.* Mr. Cowardin.

F14a. INTRODUCTION TO THE VISUAL ARTS.

Each of the visual arts is treated in a non-historical way, with special regard for the physical nature of the medium and its expressive potential. May not be counted in addition to the first semester of Fine Arts 11. Limited to freshmen and sophomores. *Three semester hours.* Mr. Cowardin.

15. ART OF THE RENAISSANCE IN ITALY.

Not offered, 1967-68.

Prerequisite: at least one semester course in art history. Offered in alternate years. *Three semester hours each semester.* Mr. Cowardin.

18. ART OF THE MODERN WORLD.

Painting, sculpture, and architecture of the nineteenth and twentieth centuries, with

special emphasis on the origins and evolution of the modern esthetic attitude and its progress to date. *Three semester hours each semester.* Mr. Murphey.

19a. INTRODUCTION TO ORIENTAL ART: THE ANCIENT NEAR EAST AND INDIA.

Prerequisite: at least one semester course in art history. Offered in alternate years. *Three semester hours.* Mr. Cowardin.

19b. INTRODUCTION TO ORIENTAL ART: CHINA AND JAPAN.

Prerequisite: at least one semester course in art history. Offered in alternate years. *Three semester hours.* Mr. Cowardin.

F100. ART WORKSHOP.

A studio course on campus which puts the student in direct contact with the materials, techniques, and fascinations of producing a work of art. Designed especially for the non-major, its purpose is to intensify awareness in the variety and subtleties of the esthetic experience through direct activity in esthetic problem solving. Uses a variety of media and approaches. In special circumstances may be counted toward the major in lieu of Fine Arts 111. Six studio hours per week. Open to freshmen. Indivisible course. *Three semester hours each semester.* Mr. Murphey.

F111. BASIC PAINTING.

The fundamental studio course given at the School of the Worcester Art Museum. Open to freshmen who plan to major in fine arts. Indivisible course. *Three semester hours each semester.* Mr. Graziani and Staff.

199. ADVANCED PAINTING AND DESIGN.

General designation for all courses at the School of the Worcester Art Museum above the elementary level. Ordinarily open only to majors. Consult the department for semester hours. Staff of the Museum School.

Geography

DEPARTMENT FACULTY

Saul B. Cohen, Ph.D., *Professor of Geography; Director of Graduate School of Geography*

Raymond E. Murphy, Ph.D., *Professor of Economic Geography; Editor of Economic Geography*

Henry J. Warman, Ph.D., *Professor of Geography*

Robert W. Kates, Ph.D., *Associate Professor of Geography**

Rodman E. Snead, Ph.D., *Associate Professor of Geography***

Jeremy Anderson, Ph.D., *Assistant Professor of Geography*

Martyn J. Bowden, M.A., *Assistant Professor of Geography*

George F. McCleary, Jr., M.A., *Assistant Professor of Geography*

J. Richard Peet, M.A., *Assistant Professor of Geography*

William A. Koelsch, Ph.D., *Assistant Professor of History and Geography*

James M. Blaut, Ph.D., *Visiting Professor of Geography*

David D. Sharon, Ph.D., *Visiting Associate Professor of Geography*

*On leave of absence, 1967-68.

**On leave first semester, 1967-68.

When the Graduate School of Geography was organized in 1921, Clark became the second university in the United States to establish a separate graduate program in geography. At the present time, advanced training is provided leading to the Master's and Doctor's degrees. In addition, the Staff offers a series of courses for undergraduates within the liberal program of the University. Clark is a center of geographical training and research in the United States, and its various offerings are geared to provide a maximum of individual attention through student-teacher dialogue.

UNDERGRADUATE PROGRAM

Majors in Geography are required to take four-to-five-year courses in Geography, and at least three-to-four-year courses in related fields. Related fields include all fields listed under Group B (Social Science) except psychology and linguistics. Related fields also include geology. A student must take 36 hours outside of the geography courses and related fields defined here to meet the requirements for the bachelor's degree.

Geography 11a, Approaches to Geography, and two of the following three courses (11b, Introduction to Physical Geography; 15b, Introduction to Economic Geography; 17b, Introduction to Cultural Geography) are required of majors. These are usually taken in the freshman or sophomore years. The other required courses are Geography 291a, Elements of Cartography, and either Geography 247a, Introduction to Quantitative Methods in Geography, or a third-year level language course.

An Honors Program in Geography offers opportunity for independent study and research. Information regarding the program can be obtained from the departmental office.

THE GRADUATE SCHOOL OF GEOGRAPHY

MASTER OF ARTS

Admission: Applicants without prior training in Geography are welcome, but may be required to improve their knowledge of Elements of Geography, Economic Geography, Cartography, and Descriptive Statistics. Courses taken to remedy any deficiencies will not count as part of the regular M.A. program. The Graduate Record Examination scores (Verbal and Quantitative) are required of all students with the exception of those in foreign countries who do not have access to the Examination. The GRE Advanced Placement Test in Geography is desirable, but not required.

The M.A. program in Geography is a two-year program. Students are required to take Geography 399, the Field Course/Field Camp, and two semester seminars. A total of eight-year-course equivalents are required, of which one to two may be in related disciplines, including reading courses. A student may elect a single or double thesis course as part of his program. For those M.A. candidates interested in Geography and its Pre-College teaching, a single semester course in Internship Teaching in the Secondary School or its equivalent is recommended.

Examinations: Comprehensive examinations for the M.A. cover five fields: (1) philosophy and methodology of geography, (2) a physical geography field, (3) a regional geography field, and (4) and (5) two other systematic fields approved by the staff. It is expected that the examination for these five fields shall be in writing and extend over five hours. In addition, a 40 minute oral performance on one of these five fields shall be taken, the field to be the major one in which the thesis is written. The comprehensive

examinations will be offered twice during the academic year, at the end of September and at the end of February.

Thesis: By April 1 of the year in which the candidate expects to receive his degree, he must submit an acceptable draft of the thesis to his adviser; this will then be circulated among the staff members for approval. After all revisions have been made and the draft approved by the adviser, the thesis is typed in final form. University requirements concerning the thesis can be found in the section on the Graduate School.

DOCTOR OF PHILOSOPHY

Entrance Requirements: Normally, to enter the Ph.D. program, a student must have completed all requirements for a master's degree in geography at Clark or at another institution. Where there are obvious deficiencies, all or part of the M.A. comprehensive examination and a paper of thesis length and quality may be required of those entering with M.A.'s from other institutions. Deficiencies which are exposed as a result of this examination are expected to be remedied by course and written work taken during the first year of doctoral residence.

Program Requirements: A doctoral candidate must fulfill a two-year residence requirement if entering with an M.A. from another institution and a one-year residence requirement if he has fulfilled the Clark two-year M.A. requirement. The candidate normally elects four courses each semester, including a minimum of two seminars. The candidate must pass an examination in French, German, Russian, or Spanish, preferably in his first year at Clark. The department may set an additional language or other requirement as the student's field or research may demand. The language and alternative requirements must be fulfilled before the preliminary examination is scheduled.

Preliminary Examinations: The candidate offers three fields in his preliminary examination. The major is the field in which he expects to write his dissertation. The other two minor fields shall be chosen from those which have particular bearing on the major field and with the written approval of the department.

Dissertation and Defense: Defense of the dissertation topic and written outline shall be made orally in the presence of the departmental faculty and any time after the first semester of residence with the consent of the staff. A student who has successfully passed his preliminary Ph.D. examinations must file for candidacy within one year after his dissertation topic has been approved and accepted.

By March 1 of the year in which the candidate expects to receive his degree, he must submit an acceptable dissertation draft to his major professor. If this is approved, it will be circulated among other staff members for their comments and a date set for its defense. If the defense is adequate, and after any necessary revisions have been approved by the major professor, the dissertation is typed in final form. Three carbon copies must be delivered to the departmental office at least four weeks before the date of commencement. This is in addition to the ribbon copy that must be delivered to the Registrar. All dissertations are microfilmed and, for this reason, it is required that illustrations be in black and white, in no case requiring more than a page.

Research of Teaching Prerequisite: Some teaching or research experience at Clark (or its equivalent at another institution) is prerequisite to the Doctor's degree.

DISTINCTIVE FEATURES AND SPECIALIZATION

Graduate students are assigned carrels in the Geography Workroom. The Workroom and other sections of the Geography Building contain specialized equipment and research facilities for the use of students and staff. The Libbey Library of the Geography Building serves for general conferences and the reception of visiting lecturers. Workroom fees totaling \$10 per semester, are payable on November 1 and March 1.

A feature of the Graduate School of Geography is a field course/camp program which includes studies of land utilization, geomorphology, meteorology, resources and urban geography, with special training in mapping and other field techniques. Cost of the Field Camp ranges from \$60 to \$80, and it is likely to be held in Puerto Rico during the month of January.

PUBLICATIONS

A professional magazine, *Economic Geography*, is edited by a staff member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic and urban geography. The magazine has a world-wide distribution, with a total circulation of 4,000.

The graduate students, through the years, have maintained the Clark University Geographical Society. It publishes *The Monadnock*, a booklet which keeps geography alumni in touch with each other and with current activities in the school.

COURSES

F11a. APPROACHES TO GEOGRAPHY.

Offered as a general framework for understanding geography for those who have a curiosity about the field. The history and philosophy of the field and the various approaches to geographic research that are employed in its major sub-fields, the latter to be treated partly in the form of case studies. For freshmen and sophomores, juniors and seniors admitted by consent of the instructor. This is part of a full-year introductory course, and must be followed by one of the following courses: Geography 11b, Introduction to Physical Geography; Geography 15b, Introduction to Economic Geography; 17b, Introduction to Cultural Geography. *Three semester hours.*

Mr. Bowden, Coordinator, and Staff.

11b. INTRODUCTION TO PHYSICAL GEOGRAPHY.

Physical geography, with emphasis on the principles of climatology and physiography. Open to freshmen and sophomores, juniors and seniors admitted only with consent of instructor. *Three semester hours.*

Mr. Warman.

F15b. INTRODUCTION TO ECONOMIC GEOGRAPHY.

Introduction to major areal differences in economic activity in the primary, secondary and tertiary sectors. For freshmen and sophomores, juniors and seniors admitted by consent of the instructor. *Three semester hours.*

Mr. Anderson.

F17b. INTRODUCTION TO CULTURAL GEOGRAPHY.

Study of the effect of culture on the earth, and the varying uses of natural resources at different cultural levels. For freshmen and sophomores, juniors and seniors admitted by consent of the instructor. *Three semester hours.*

Mr. Blaut.

150b. MANAGEMENT AND CONSERVATION OF RESOURCES.

Not offered, 1967-68.

An introduction to natural resource problems arising from population pressure, change

in taste and technology, and concern with the quality of the environment. Field trips required with \$5.00 field trip fee. Limited to 25 students. Prerequisite: introductory social or natural science course. *Three semester hours.*

19b. MAP APPRECIATION AND READING.

The philosophy and history of maps and mapping; types of maps and elements of maps. A general liberal arts approach to maps and cartography. *Three semester hours.*

Mr. McCleary.

200. GEOGRAPHY AND EDUCATION.

Geography in the present-day school system; designed to meet needs of those teaching or expecting to teach geography as a separate subject or in the social studies. *Three semester hours each semester.*

Mr. Warman.

202. HONORS.

Independent study, reading and research. Open only to honors undergraduates. *Three to six semester hours.*

Staff.

214a. PRINCIPLES OF GEOMORPHOLOGY.

Not offered, 1967-68.

The analysis and distribution of physical features in the geographic landscape. Field trips required, with \$5.00 field trip fee. Prerequisite: Geography 11b or Geology 12, or equivalent. *Three semester hours.*

214b. REGIONAL PHYSIOGRAPHY.

The regional interpretation of major land forms of North America and their inter-relationships with climate, vegetation and soils. Field trips required, with \$5.00 field trip fee. Prerequisite: Geography 214a or equivalent. *Three semester hours.*

Mr. Snead.

220a. ELEMENTS OF PHYSICAL CLIMATOLOGY.

A survey of the elements of climate, atmospheric circulation and the exchange of heat and moisture between the earth and its atmosphere. Prerequisite: Geography 11b or consent of the instructor. *Three semester hours.*

Mr. Sharon.

221b. REGIONAL CLIMATOLOGY.

World classification and description of climates. The various classifications of climate, especially as related to vegetation. Prerequisite: Geography 220a or consent of the instructor. *Three semester hours.*

Mr. Sharon.

230. POLITICAL GEOGRAPHY.

Theory and structure of political geography. Political processes and the physical cultural landscape; spatial structure of the national state and of international political systems. Prerequisites: Geography 11a, or Government 14. *Three semester hours each semester.*

Mr. Cohen.

240a. AGRICULTURAL GEOGRAPHY.

A study of physical, and cultural factors associated with the areal differentiation of agricultural systems. Space-adjusting strategies of individual farm systems, national strategies of agricultural development. *Three semester hours.*

Mr. Anderson.

245. COMPARATIVE STUDIES IN HISTORY AND GEOGRAPHY.

(Offered jointly with History Department) Comparative analysis of selected literature of historical geography and related fields of history with special attention to methodologic distinctives, and synthesis of complementary approaches of the two disciplines in a study of processes of settlement and resource utilization in selected areas of eastern United States and Canada before 1860. *Three semester hours each semester.*

Mr. Koelsch.

247a. INTRODUCTION TO QUANTITATIVE METHODS IN GEOGRAPHY.

Elementary statistical methods for geographers. Prerequisite: consent of the instructor.
Three semester hours. Mr. Sharon.

260. GEOGRAPHY OF MANUFACTURING AND ENERGY.

A description and analysis of the spatial distributions of manufacturing and energy resource exploitation in the world, including an introduction to industrial location theory. *Three semester hours each semester.* Mr. Peet.

272. HISTORICAL-CULTURAL GEOGRAPHY.

Not offered, 1967-68.
 An historical approach to the study of man's transformation and use of the earth. *Six semester hours.*

282a. GEOGRAPHY OF ANGLO-AMERICA.

Not offered, 1967-68.
Three semester hours.

283a. GEOGRAPHY OF SOUTH AMERICA.

Three semester hours. Mr. Warman.

283b. GEOGRAPHY OF MIDDLE AMERICA.

Three semester hours. Mr. Blaut.

285b. GEOGRAPHY OF EUROPE.

Not offered, 1967-68.
Three semester hours. Mr. Bowden.

286b. GEOGRAPHY OF SOUTHERN ASIA.

Three semester hours. Mr. Snead.

287b. GEOGRAPHY OF THE SOVIET UNION.

A topical (systematic) approach will be followed with special emphasis on the historical geography of the Russian Empire and the economic geography of the U.S.S.R. *Three semester hours.* Mr. Anderson.

291a. ELEMENTS OF CARTOGRAPHY.

Principles of cartography, including scale and map projections; compilation, generalization, symbolization, and the fundamentals of design. Two-hour weekly laboratory. Required for all undergraduate majors. Prerequisite: Geography 19b or permission of the instructor (open to sophomores with Geography 19b, Map Appreciation and Reading). Fulfills the departmental requirements for M.A. candidates. *Four semester hours.*

Mr. McCleary.

291b. MAP ANALYSIS AND USE.

Not offered, 1967-68.
 Methods and procedures for the analysis of areal distributions, particularly those expressed in cartographic form. Prerequisite: Geography 291a; a knowledge of statistical methods is strongly recommended. *Three semester hours.*

292a. MAP DESIGN.

Theory and practice in the development of the design of maps. The map is examined from different points of view—as a medium of communication, as a perceived object, and as an information system. Prerequisite: Geography 291a. *Three semester hours.*

Mr. McCleary.

294b. CARTOGRAPHIC TECHNIQUES.

Methods of map preparation and reproduction (including various technical skills), with attention focused on computerized mapping programs. Prerequisite: Geography 291a. *Three semester hours.*

Mr. McCleary.

296b. THE MAP AS AN EDUCATIONAL MEDIUM.

The fundamentals of cartography and mapping; discussion of map design for classroom use in elementary and secondary schools. Although primary emphasis is on concepts and theory, much attention will be given to the technical facets of this activity. For undergraduates, Geography 19b is strongly recommended; open to sophomores with Geography 19b. *Four semester hours.* Mr. McCleary.

310b. PRINCIPLES OF GEOMORPHOLOGY.

Not offered, 1967-68.

*Three semester hours.***331b. PROBLEMS IN POLITICAL GEOGRAPHY.**

Historical development of political geography; current theory and research approaches. Prerequisite: Geography 230 or its equivalent. *Three semester hours.* Mr. Cohen.

335b. HISTORY OF AMERICAN GEOGRAPHIC THOUGHT.

Development of early American geographic ideas and institutions as an aspect of American thought and culture; growth of geographic scholarship in the late nineteenth and twentieth centuries through an examination of selected major figures and schools of thought. (Offered jointly with History Department) *Three semester hours.* Mr. Koelsch.

340a. AGRICULTURAL GEOGRAPHY.

A study of physical, and cultural factors associated with the areal differentiation of agricultural systems. Space-adjusting strategies of individual farm systems, national strategies of agricultural development. *Three semester hours.* Mr. Anderson.

347b. QUANTITATIVE METHODS IN GEOGRAPHIC RESEARCH.

Application of quantitative methods to current geographic research. Prerequisite: Geography 245a or equivalent. *Three semester hours.* Mr. Sharon.

350b. PROBLEMS OF RESOURCE MANAGEMENT.

Methods of estimation and projection of resource availability and need. Evaluation of institutions for resource allocation and decision-making. *Three semester hours each semester.* To be announced.

360a. THEORY AND PROBLEMS IN ECONOMIC GEOGRAPHY.

Various research fields, research methods, and detailed techniques in economic geography. *Three semester hours.* Mr. Peet.

361. URBAN GEOGRAPHY.

A systematic study of the American city at both intercity and intracity levels. Emphasis on research that has been done, and on sources and research ideas. *Six semester hours.*

Mr. Murphy.

362. HISTORICAL URBAN GEOGRAPHY.

Study of man's changing conception and idealization of the town; and of the external relations and internal structure of urban places from 5000 BC to the present. *Six semester hours.* Mr. Bowden.

364b. TRANSPORTATION AND REGIONAL ECONOMIC DEVELOPMENT.

The historical role of transportation in the process of regional economic growth. *Three semester hours.* Mr. Peet.

370a. HUMAN AND CULTURAL GEOGRAPHY.

Not offered, 1967-68.

Three semester hours.

390a. AIR PHOTO INTERPRETATION.

Not offered, 1967-68.

Three semester hours.

399a. FIELD COURSE AND CAMP.

A fall program of field techniques and a three week field camp in January to be held either in the Caribbean or Southern United States. Fee to range from \$60 to \$80 depending on locale. Required of graduate students who have not had equivalent.

Three semester hours.

Mr. Anderson, Mr. Snead, and Staff.

SEMINARS

30a. SEMINAR IN POPULATION GEOGRAPHY.

Three semester hours.

Mr. Warman.

315b. SEMINAR IN GEOMORPHOLOGY.

Three semester hours.

Mr. Snead.

320b. SEMINAR IN CLIMATOLOGY.

Three semester hours.

Mr. Sharon.

340b. SEMINAR IN AGRICULTURAL GEOGRAPHY.

Three semester hours.

Mr. Anderson.

355b. SEMINAR ON RESOURCES.

Three semester hours.

To be announced.

356b. SEMINAR ON PERCEPTION OF THE GEOGRAPHIC ENVIRONMENT.

Three semester hours.

Mr. Bowden.

363b. SEMINAR IN MARKETING GEOGRAPHY.

Three semester hours.

Not offered, 1967-68.

365b. SEMINAR IN ECONOMIC GEOGRAPHY.

Three semester hours.

Not offered, 1967-68.

366a. SEMINAR IN URBAN GEOGRAPHY.

Three semester hours.

Not offered, 1967-68.

371a. SEMINAR IN HISTORICAL AND CULTURAL GEOGRAPHY.

Three semester hours.

Not offered, 1967-68.

372a. SEMINAR IN THE HISTORICAL GEOGRAPHY OF NEW ENGLAND.

Three semester hours.

Not offered, 1967-68.

375a. SEMINAR IN CULTURAL GEOGRAPHY.

Three semester hours.

Not offered, 1967-68.

376b. SEMINAR IN PEASANT AGRICULTURE.

Three semester hours.

Mr. Blaut.

380a. SEMINAR IN PHILOSOPHY OF GEOGRAPHY.

Three semester hours.

Mr. Blaut.

381b. SEMINAR ON THEMES IN GEOGRAPHIC THOUGHT.

Three semester hours.

Not offered, 1967-68.

382b. SEMINAR IN HISTORICAL GEOGRAPHY OF WESTERN NORTH AMERICA.

Three semester hours.

Not offered, 1967-68.

391a. SEMINAR IN CARTOGRAPHY.
Three semester hours.

Not offered, 1967-68.

READING, RESEARCH AND THESIS COURSES

300. READING COURSE.

Prerequisite: consent of the instructor.

301. RESEARCH IN GEOGRAPHY.

Prerequisite: consent of the instructor.

302. THESIS RESEARCH.

Single or double course. Prerequisite: consent of the staff.

Strongly recommended for concentration in Economic Geography:

Economics 277. REGIONAL ECONOMICS.

Six semester hours.

Mr. Bell.

Economics 290. ECONOMETRICS.

Six semester hours.

Mr. Bell.

Geology

DEPARTMENT FACULTY

Wesley E. Bryers, Ph.D., *Associate Professor of Geology, Department Chairman*

Kathryn H. Gray, M.S., *Assistant Professor of Geology*

Richard P. Hight, Ph.D., *Assistant Professor (Affiliate) of Geology*

Joseph A. Sinnott, M.S., *Lecturer in Geology*

UNDERGRADUATE PROGRAM

The department offers an undergraduate major in cooperation with Dr. Snead of the University's Graduate School of Geography and Joseph R. Sage of the Civil Engineering Department of Worcester Polytechnic Institute.

Majors in geology are required to take seven year-courses or their equivalent in half-year courses. At least four and one-half of these courses must be in geology.

Attendance at an approved summer field camp is required of majors and counts as a half to full-year course in geology. The field station operated by Miami University, Oxford, Ohio is located at Dubois, Wyoming, near Yellowstone National Park. It will be used by all students attending a western field camp. Anyone unable to make arrangements for a summer in the West will be placed in a field camp operated by an eastern college, at the discretion of the department.

Related fields which may be used toward supplementing the requirements for the major are civil engineering, biology, chemistry, mathematics, physics, and cartography. Courses chosen from these fields are based upon the student's desire to fulfill the general requirements for graduate work. They are not required by the department for a major except where they relate to the general requirements of the university.

In addition, at least 36 semester hours of a major's program must be selected from other than Group A and civil engineering courses, and geography courses in geomorphology and physiography.

COURSES

✓ F11. GENERAL GEOLOGY.

Introduction to geology, origin of the earth, its development through time and the succession of plant and animal life. First semester deals with common rocks, their structure, origin and occurrence; geological activities of the air, streams and sea; nature of glaciers, volcanoes and earthquakes, and age of the earth. Laboratory work consists of rock and mineral identification and map interpretation. Second semester deals with the origin of continents and ocean basins, their development through time; the geologic history of North America; and evolution of life through geologic time. Laboratory work consists of geologic map interpretation and fossil identification. Occasional field trips. Indivisible course. Open to freshmen. Laboratory. *Four semester hours each semester.*

Mr. Bryers and Assistants.

✓ 111a. INTRODUCTORY MINERALOGY.

Study of crystallographic, physical and chemical properties of common minerals. Field trip. Laboratory. *Four semester hours.*

Mr. Bryers.

✓ 112a. OPTICAL MINERALOGY.

Principles of optics as applied to the identification of minerals with the polarizing microscope. Laboratory. *Four semester hours.*

Mr. Hight.

✓ 114b. PETROGRAPHY.

The classification, description and thin section study of the common rock groups. Laboratory. *Four semester hours.*

Mr. Hight.

✓ 122. ECONOMIC GEOLOGY. ✓ 2

Introductory survey of the origin and structural relations of the important metallic and non-metallic mineral deposits. Techniques of exploration and mining will be reviewed. Field trips. Laboratory. *Four semester hours each semester.*

Mr. Bryers.

✓ 131b. STRUCTURAL GEOLOGY.

Not offered, 1967-68.

Analysis of rock deformation based on the principles of mechanics and the utilization of research data obtained from laboratory and field investigations. The principles of structural geology will be applied to the interpretation of major fold, fault and fracture systems of the earth. Field trip. Laboratory. *Four semester hours.*

Mr. Bryers.

✓ 141a. THE FOSSIL RECORD.

Not offered, 1967-68.

A systematic survey of the morphology, taxonomy and geologic history of groups of organisms commonly found as fossils. The techniques and principles used for interpreting the fossil communities in terms of age and environment will be discussed. Field trip. Laboratory. *Four semester hours.*

Mr. Bryers.

✓ 151b. INTRODUCTORY FIELD METHODS. *on Summer Field - at least 1 yr*

A survey course in field geology. Includes introductory methods in plane table mapping, air photo interpretation, and topographic mapping. Numerous field excursions. Prerequisite: permission of department. *Three semester hours.*

Mr. Sinnott.

161a and b. SPECIAL PROJECTS.

Selected Research Topics in Geology. Prerequisite: permission of department. *Two semester hours each semester.*

Staff.

✓ 171a. LITHOLOGY.

A descriptive study of the major classes of rocks with emphasis on their origin, occur-

rence, and the megascopic structural and mineral characteristics of representative samples. Laboratory. *Four semester hours.* MRS. GRAY.

181b. PRINCIPLES OF STRATIGRAPHY.

The principles of classification and correlation of rock strata and their application to regional stratigraphic problems in North America. Laboratory. *Four semester hours.*

Mrs. Gray.

SUMMER FIELD CAMP IN GEOLOGY.

Required of geology majors and should be taken at the end of the sophomore or junior year at a field camp approved by the department. *Three to six semester hours.*

Geography: course descriptions are listed in the section, "Geography."

214a. PRINCIPLES OF GEOMORPHOLOGY.

Mr. Snead.

214b. REGIONAL PHYSIOGRAPHY.

Mr. Snead.

Civil Engineering: course descriptions are listed in the section, "Department of Civil Engineering" in the catalog of Worcester Polytechnic Institute.

CE. 540. ENGINEERING GEOLOGY.

Mr. Sage.

CE. 541. SEDIMENTATION

Mr. Sage.

German

DEPARTMENT FACULTY

Karl J. R. Arndt, Ph.D., *Professor of German, Department Chairman*

James S. Edwards, A.M., *Associate Professor of German*

Walter Schatzberg, Ph.D., *Assistant Professor of German*

Erika T. Theobald, Ph.D., *Assistant Professor of German*

UNDERGRADUATE PROGRAM

The Department of German intends primarily to give its students a liberal and humanistic education by presenting and interpreting the language, life, and literature of German-speaking peoples. Students interested in German as their major should consult the department chairman; for honors programs, Mr. Edwards. The Department requires a regular class attendance in all courses.

In addition, at least 36 semester hours of a major's program must be selected from other than Group C and Group D courses.

FIRST YEAR COURSES

F11. INTRODUCTORY GERMAN.

A comprehensive introduction to the written as well as the spoken language. The course aims at acquisition of all four skills: reading, writing, speaking and understanding. The language laboratory will be used to assist in reaching these goals. Laboratory fee. Indivisible course. *Three semester hours each semester.*

Mr. Edwards, Mr. Schatzberg and Mrs. Theobald.

SECOND YEAR COURSES

F12. INTERMEDIATE GERMAN.

Review of German grammar. Study of expository and narrative prose. Aural and oral

training will be continued with the assistance of the language laboratory. Laboratory fee. Prerequisite: German 11 or advanced placement. *Three semester hours each semester.*

Staff.

F14. INTRODUCTION TO GERMAN LITERATURE (Intermediate German course).

Principally a reading course for students who wish to gain as rapidly as possible a general knowledge of German Literature at the intermediate level. Reading and interpretation of the works of representative German writers. Prerequisite: German 11 or two years of high school German and consent of instructor. Laboratory fee. *Three semester hours each semester.* Mrs. Theobald.

ADVANCED COURSES

132. ADVANCED COMPOSITION AND LITERATURE.

Intensive training in the aural, oral, and written use of the language in preparation for teaching and government service. Required of majors. Prerequisite: oral and written examination. *Three semester hours each semester.* Mrs. Theobald.

134. GERMAN LITERATURE SINCE GOETHE.

Not offered, 1967-68.

Reading and interpretation of representative works of German literature since Goethe. Prerequisite: German 12 or advanced placement. *Three semester hours each semester.*

Mr. Edwards.

136. GERMAN LYRICS.

Not Offered, 1967-68.

German lyric poetry from the Baroque to the present. Prerequisite: German 12. *Three semester hours each semester.*

Mr. Arndt.

138. CONTEMPORARY GERMAN DRAMA.

Not offered, 1967-68.

Reading and interpretation of outstanding works of contemporary German drama, including plays of Dürrenmatt, Frisch, Hochwälder, Hochhuth, and Peter Weiss. Prerequisite: German 12. *Three semester hours each semester.*

Mrs. Theobald.

140a. GERMAN ENLIGHTENMENT.

Selected readings from the works of Wolff, Gottsched, Brockes, Haller and Lessing. Several Storm and Stress authors will also be considered toward the end of the semester. Prerequisite: German 12. *Three semester hours.*

Mr. Schatzberg.

142b. GERMAN ROMANTICISM.

A study of selected works by the Schlegel Brothers, Novalis, Tieck, Brentano, Chamisso, Fouque, E.T.A. Hoffmann, Eichendorff and Heine. Prerequisite: German 12. *Three semester hours.*

Mr. Schatzberg.

150a. GOETHE.

Not offered, 1967-68.

An introduction to the life and work of Goethe, excepting his Faust. Replaces first semester of 130. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Arndt.

152b. SCHILLER.

Not offered, 1967-68.

An introduction to the life and work of Schiller. Replaces second semester of 130. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Arndt.

154. HISTORY OF GERMAN LITERATURE.

Survey of German literature from earliest times to the present. Given in German. Prerequisite: German 132 or consent of the instructor. *Three semester hours each semester.*

Mr. Edwards.

162a. GOETHE'S FAUST.

Reading and discussion of Goethe's *Faust I and II*. Given in German. Prerequisite: German 132 or consent of the instructor. *Three semester hours.* Mr. Arndt.

165b. FROM EXPRESSIONISM TO CATASTROPHE.

Not offered, 1967-68.

German literature from World War I to World War II. Given in German. Prerequisite: German 132 or consent of the instructor. *Three semester hours.* Mr. Arndt.

166. GERMAN DRAMA SINCE KLEIST.

Given in German. *Three semester hours each semester.*

Mr. Edwards.

196. INDEPENDENT READING AND RESEARCH IN GERMAN LITERATURE.

Independent course of study limited to highly qualified seniors. Reading and research will be in German and the program arranged individually. Prerequisite: consent of the instructor. *Three semester hours each semester.* Mr. Arndt.

198. SEMINAR.

Not offered, 1967-68.

Principally for majors but open to other qualified upperclassmen. Research into selected areas of German literature. Prerequisite: consent of the instructor. *Three semester hours each semester.* Staff.

COURSES GIVEN IN ENGLISH

141. GERMANIC CIVILIZATION.

Not offered, 1967-68.

Illustrated lecture course on the literature, history and fine arts of German lands from the Holy Roman Empire to the present day, with emphasis on the Reformation, Age of Enlightenment and the Classical Period. Given in English. *Three semester hours each semester.* Mr. Edwards.

197a. THE FAUST THEME IN LITERATURE.

Not offered, 1967-68

A study of the fortunes of Faust and the Faustian spirit as treated in European and American literature from the Reformation to Hiroshima. Given in English. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Arndt.

199. THE GERMAN CONTRIBUTION TO WORLD LITERATURE.

Goethe in 1827: "The epoch of world literature is here and everyone must now work to hasten the development of this epoch." This course will study such translated works of German literature which contribute most to the understanding of Germany and her place in the Western world. Reading, analysis and discussion of translated works from various periods of German literature, starting with the *Song of the Nibelungs* and ending with representative works of the currently dominant "Group 1947." Given in English. Prerequisite: consent of the instructor. *Three semester hours each semester.*

Mr. Arndt.

History, Government and International Relations

DEPARTMENT FACULTY

Sherman S. Hayden, Ph.D., *Professor of International Relations,
Department Chairman*

George A. Billias, Ph.D., *Professor of American History*

Robert F. Campbell, Ph.D., *Professor of American History*

Morris H. Cohen, Ph.D., *Professor of Government*

Gerald N. Grob, Ph.D., *Professor of American History*

Daniel R. Borg, Ph.D., *Associate Professor of European History**

Thomas C. Barrow, Ph.D., *Associate Professor of American History*

Knud Rasmussen, Ph.D., *Associate Professor of Government*

William A. Koelsch, Ph.D., *Assistant Professor of American History*

David W. Savage, Ph.D., *Assistant Professor of English History*

Stewart A. Stehlin, Ph.D., *Assistant Professor of European History*

John O. Iatrides, Ph.D., *Lecturer in European History*

Marcus A. McCorison, M.S., *Lecturer in American History*

James F. Powers, Ph.D., *Lecturer in Medieval History*

*On leave of absence, 1967-68.

UNDERGRADUATE PROGRAM

The department offers basic courses in the fields of American, European and British history, American and European government, and international relations. It offers major programs of study in history, government and international relations.

All history majors must take 36 hours in history (unless History 10 has been anticipated). Six hours must be in American and six in European history, and twelve hours in other social sciences are required. For full details concerning this and other department majors, consult a departmental representative.

All government majors must take Government 159b, preferably in their freshman year. Majors in government should also take Government 15 before the end of their sophomore year and Government 205a and b preferably in their junior year. In addition, majors will normally take at least one year each in the field of American government and politics, the field of constitutional law, and the field of international studies or that of comparative government.

Majors in international relations should take History 10 and Government 159b in the freshman year, and Economics 11 and Government 14 before the end of the sophomore year. Also required for this major are History 205a, Government 240b or 242b and 241, and twelve hours in economics, geography, or history.

Thirty-six hours of a major's program must be selected from fields *other than* economics, geography, government, history, sociology, psychology.

Non-majors who have not taken History 10 may elect other courses offered by the department with permission of the instructor if, in his judgment, the student has an adequate background for the course.

GRADUATE PROGRAM

The principal fields of graduate study are American, English and European history and politics, modern diplomacy, and the international relations of the United States, Europe, and the Commonwealth. Full time residence is expected for the first year of study.

Master of Arts: The program for the degree of Master of Arts is worked out individually with each student, who may choose to concentrate on history, government or international relations. All students are required to take the departmental seminar, History 30a.

A master's thesis and an oral examination are required for this degree. A complete draft of the thesis must be received by the Monday following spring recess of the year in which the candidate hopes to receive the degree.

Doctor of Philosophy: The program for the degree of Doctor of Philosophy may be taken in history or international relations. Each student must choose four fields of study, to be agreed upon as early as possible in the first year of residence beyond the Master of Arts and after a conference between the student and the department staff. In a history program, at least one field must be chosen from related subjects. In an international relations program, work in economics and geography is desirable upon consultation among the departments concerned. One or two of the four fields should be completed by passing written examinations. The others are tested by an oral examination given by the staff. The passing of the four fields by courses or examination constitutes the "preliminary examination."

Before completing the preliminaries, examinations in French and German must be passed. Permission may be requested to substitute another language for one of these or a second examination in either one designed to demonstrate research competence at a high level.

The doctoral dissertation, written in that field which is designated as the special field, must be submitted in complete preliminary draft to the supervising instructor not later than March 1 of the year in which the candidate hopes to receive the degree. The final examination for the doctorate covers both the dissertation and the special field.

Some teaching experience at Clark, or such other teaching as the department may regard as equivalent, is prerequisite to the Doctor's degree.

Attention is invited to a three-year special program leading to the Doctor's degree in Colonial and Early American History.

COURSES IN HISTORY

F10. EUROPE AND THE UNITED STATES SINCE 1500.

A study of selected topics designed to illustrate the evolution of modern Western society. The emphasis throughout will be on the thought patterns underlying institutional developments. *Three semester hours each semester.* Mr. Campbell, Mr. Stehlin.

12. HISTORY OF ENGLAND.

Three semester hours each semester.

Mr. Savage.

141a. THE AMERICAN CHARACTER.

A study of the problems of national characters and its historical validity. *Three semester hours.* Mr. Barrow.

202. THE IDEA OF HISTORY.

Not offered, 1967-68.

Readings and discussion in European history from 1500 to 1815: the Reformation, rise of modern science, the Enlightenment, development of political absolutism, French Revolution, Napoleonic period. *Note:* No longer a seminar in history of the idea of history. *Three semester hours each semester.* Mr. Borg.

208a. TOTALITARISM.

Not offered, 1967-68.

A seminar on the origins, ideology and operation of the German Nazi and Italian Fascist regimes. *Three semester hours.* Mr. Borg.

209b. CHURCH AND STATE IN MODERN EUROPE.

Not offered, 1967-68.

A seminar on church-state relations since the Reformation, with special reference to political attitudes and involvements of established churches since the French Revolution. *Three semester hours.* Mr. Borg.

21a and b. FOUNDATIONS OF MODERN EUROPE.

The European Middle Ages from the Fall of Rome to about 1500.

Three semester hours each semester.

Mr. Powers.

210. EUROPE, 1648-1815.

Not offered, 1967-68.

The rise of the absolute state, the old regime, the French Revolution and Napoleon. Attention is given to the rise of science, the Enlightenment and the origins of liberalism and rationalism. Offered in alternate years. *Three semester hours each semester.* Mr. Borg.

211. EUROPE, 1815-1939.

Offered in alternate years. *Three semester hours each semester.*

Mr. Stehlin.

213. EUROPEAN DIPLOMATIC HISTORY FROM 1815.

Not offered, 1967-68.

Three semester hours each semester.

Mr. Stehlin.

214a. ORIGINS OF WORLD WAR I.

Seminar focusing on the varying interpretations of the causes of the war, on diplomatic crises that led to it, and on internal political problems that bore indirectly on the outbreak of war. *Three semester hours.*

Mr. Stehlin.

215. GERMANY SINCE 1500.

Not offered, 1967-68.

Offered in alternate years. *Three semester hours each semester.*

Mr. Borg.

216b. THE WEIMAR REPUBLIC 1918-1933.

Seminar on Germany's first experiment with democracy, focusing on the Republic's origins in revolution, the conflict of ideologies, its political instability, its culture, and the ultimate success of the Nazi and folkish movements. *Three semester hours.* Mr. Stehlin.

22b. TUDOR AND STUART ENGLAND.

Not offered, 1967-68.

The period from 1485 to 1688 with attention to the social backgrounds of English literature and conditions leading to the colonization of America. *Three semester hours.*

221. MODERN ENGLAND.

Stress will be on political and social change. *Three semester hours each semester.*

Mr. Savage.

225a. RECENT HISTORY OF THE BRITISH EMPIRE AND COMMONWEALTH.

Not offered, 1967-68.

Developments since about 1900. *Three semester hours.*

231a. THE EXPANSION OF EUROPE.

A survey of the origins and consequences of European expansion, with particular emphasis on English developments. *Three semester hours.* Mr. Barrow.

232b. ENGLAND IN AMERICA 1600-1700.

An analysis of the process and consequences of the transplantation of Englishmen and English traditions to the new American environment. *Three semester hours.* Mr. Barrow.

233. THE AMERICAN COLONIES IN THE EIGHTEENTH CENTURY.

An analysis of pre-Revolutionary American society, developments in politics and ideology, coming of the Revolutionary War, and transition from colonial to national status. *Three semester hours each semester.* Mr. Billias.

234a. THE FEDERALIST PERIOD.

A seminar devoted to the ideology, aims, and practices of the Federalists. *Three semester hours.* Mr. Billias.

234b. THE JEFFERSONIAN PERIOD.

A seminar analyzing the problems of the Jeffersonian party in power, with emphasis upon ideological conflicts, domestic difficulties, and foreign policy problems. *Three semester hours.* Mr. Billias.

235. INTRODUCTION TO RESEARCH IN AMERICAN COLONIAL HISTORY.

Historiography of leading American colonial historians from colonial times to the present combined with an examination of bibliographical guides to the field. *Three semester hours each semester.* Mr. Billias and Mr. McCorison.

236. THE UNITED STATES 1828-1917.

Three semester hours each semester. Mr. Grob.

237a. THE UNITED STATES SINCE 1917.

Three semester hours. Not offered, 1967-68.
Mr. Campbell.

240. INTELLECTUAL HISTORY OF THE UNITED STATES.

Three semester hours each semester. Mr. Koelsch and Mr. Grob.

242b. AMERICAN ECONOMIC HISTORY.

A survey of American economic development from colonial days to the present. *Three semester hours.* Mr. Barrow.

243a. AMERICAN DIPLOMATIC HISTORY, 1778-1941.

Three semester hours. Mr. Hayden.

245. COMPARATIVE STUDIES IN HISTORY AND GEOGRAPHY.

First Semester: Comparative analysis of selected literature of historical geography and related fields of history with special attention to methodologic distinctives. *Second Semester:* Synthesis of complementary approaches of the two disciplines in a study of processes of settlement and resource utilization in selected areas of eastern United States and Canada before 1860. *Three semester hours each semester.* Mr. Koelsch.

274b. THE MODERN FAR EAST.

Primarily international relations in the region since 1895. Offered in alternate years. *Three semester hours.* Mr. Hayden.

281b. RUSSIA, 1700-1917.

Three semester hours. Mr. Iatrides.

282b. HISTORY OF THE SOVIET SYSTEM.

A brief survey of Marxist ideology and pre-1917 Russian history and a concentration on the political, economic (non-technical) and social evolution of Russia under the Communist regime. *Three semester hours.* Mr. Iatrides.

30a. DEPARTMENT SEMINAR.

Introduction to bibliography and methods of research. Required of all first-year graduate students in the department. *Three semester hours.* Mr. Grob and the Staff.

321a. VICTORIAN ENGLAND.

Not offered, 1967-68.

Individual reports will be emphasized. *Three semester hours.*

331a. MIDDLE PERIOD OF AMERICAN HISTORY, 1815-1860.

A research seminar in which students will write several short papers for group discussion and criticism. *Three semester hours.* Mr. Koelsch.

332. THE LITERATURE OF AMERICAN HISTORY: The National Period.

Readings and discussion in the field of United States history since 1815. *Three semester hours each semester.* Mr. Grob.

333. PROBLEMS IN AMERICAN COLONIAL HISTORY.

Three semester hours each semester.

Mr. Billias.

335b. HISTORY OF AMERICAN GEOGRAPHIC THOUGHT.

Development of early American geographic ideas and institutions as an aspect of American thought and culture; growth of geographic scholarship in the late nineteenth and twentieth centuries. *Three semester hours.* Mr. Koelsch.

GRADUATE READING AND THESIS COURSES

31. READING } IN THE HISTORY AND INTERNATIONAL RELATIONS OF EUROPE.

310. THESIS } Mr. Stehlin.

32. READING } IN THE HISTORY AND INTERNATIONAL RELATIONS OF ENGLAND

320. THESIS } AND THE BRITISH EMPIRE. Mr. Savage.

33. READING } IN THE HISTORY OF THE UNITED STATES.

330. THESIS } Mr. Billias, Mr. Grob, Mr. Campbell.

COURSES IN GOVERNMENT

14. INTERNATIONAL RELATIONS.

A survey of world politics since 1918, with emphasis on the shifting patterns of power and the rise of new nations and revolutionary doctrines. The second semester deals mainly with events since World War II. *Three semester hours each semester.* Mr. Hayden.

15. INTRODUCTION TO AMERICAN GOVERNMENT.

A short survey of the theories of the origins and purposes of the state is followed by a study of American government with emphasis on contemporary problems of the federal government. *Three semester hours each semester.* Mr. Cohen.

159b. INTRODUCTION TO POLITICAL SCIENCE.

A survey of the components of political science with discussion of the development of the discipline. Some emphasis will be placed upon the systematic analytic study of modern political systems. *Three semester hours.* Mr. Rasmussen.

205a. ROOTS OF POLITICAL THOUGHT.

A study of the development of Western political thought from the Socratic philosophies to Hobbes. The study will deal with the evolution of political thought in the context of influential, social, political, and economic forces. *Three semester hours.* Mr. Rasmussen.

205b. RECENT POLITICAL THOUGHT.

A study of modern political theory as developed in the context of the social, political, and economic forces which have shaped Western thought since the French Revolution. *Three semester hours.* Mr. Rasmussen.

240b. SEMINAR IN INTERNATIONAL RELATIONS.

Basic ideas and their application to current problems. This or 242b required for international relations majors. Open to a limited number of non-majors at the discretion of the instructor. *Three semester hours.* Mr. Hayden.

241. INTERNATIONAL LAW AND ORGANIZATION.

Not offered, 1967-68.

First semester deals with the historic principles of international law and their application in the modern world. Second semester deals with the institutions created to handle problems of commerce, welfare and collective security on an international basis. Offered in alternate years. *Three semester hours each semester.* Mr. Hayden.

242b. INTERNATIONAL POLITICS.

A study of contemporary trends in international politics. Some emphasis will be placed on a systematic study of the national versus the international community. This course or 240b required for international relations majors. *Three semester hours.* Mr. Rasmussen.

25a. COMPARATIVE GOVERNMENT.

Not offered, 1967-68.

A comparative study of the major West European political systems. Some study of the political historic development will lay the basis for comparison of modern functions of government. *Three semester hours.* Mr. Rasmussen.

250. SEMINAR IN 20TH CENTURY POLITICAL THEORY.

A study of normative and analytic theory. Some emphasis will be placed on the individual in a modern mass society and the impact the development of the mass society has had upon theory. Prerequisite: Roots of Political Thought and Recent Political Thought or the permission of the instructor. *Three semester hours.* Mr. Rasmussen.

251a. AMERICAN POLITICAL PARTIES.

Not offered, 1967-68.

American party organizations, pressure groups and the electorate in American politics, with emphasis on current problems and trends in the field. Offered in alternate years. *Three semester hours.* Mr. Cohen.

252b. INTRODUCTION TO PUBLIC ADMINISTRATION.

Not offered, 1967-68.

An examination of the role of administration in modern government, including problems of personnel administration, fiscal management, administrative regulation and government organization. Offered in alternate years. *Three semester hours.* Mr. Cohen.

254. AMERICAN CONSTITUTIONAL LAW.

A study of the major developments in our constitutional system and law, with emphasis in the second semester on contemporary cases and problems in civil liberties. *Three semester hours each semester.* Mr. Cohen.

255b. THE LEGISLATIVE PROCESS.

Not offered, 1967-68.

A study of policy-making in Congress, involving problems of legislative organization and procedure, leadership and presidential-legislative relationships, examined primarily by the case method and by individual research on particular pieces of recent legislation. *Three semester hours.* Mr. Cohen.

341a. PROBLEMS IN INTERNATIONAL RELATIONS.

Three semester hours.

Mr. Hayden.

351a. PROBLEMS IN AMERICAN GOVERNMENT.

Three semester hours.

Mr. Cohen.

GRADUATE READING AND THESIS COURSES

34.	READING	}	IN INTERNATIONAL RELATIONS.
340.	THESIS		

Mr. Hayden.

35.	READING	}	IN GOVERNMENT AND POLITICS.
350.	THESIS		

Mr. Cohen, Mr. Rasmussen.

Linguistics

115. MAN AND LANGUAGE.

An introduction to the analysis of the nature and function of human language and its role in the life of individuals and societies. The approach is interdisciplinary, with attention to the points of view of philology, contemporary linguistics, anthropology, psychology and philosophy. The lectures focus on such questions as: What is language? What is the relation between language and thought? To what extent does our language determine how we perceive the world? Why and how do languages change? What other functions does language serve besides communication? Why do we not have a world language? How have linguists achieved an objective, scientific analysis of linguistic systems? What are the limitations of such a science?

The course is designed for the general student who wishes to know more about the nature of the uniquely and universally human institution of language, and for the student or teacher of English or foreign languages who is interested in the light which linguistic science can throw upon the relations between his field and other areas of life and knowledge.

First semester: lectures. Second semester: a seminar in which the members of the group report in depth on problems of their choosing.

Consent of the instructor required. Offered in alternate years. *Three semester hours each semester.*

Mr. Reid.

Mathematics

DEPARTMENT FACULTY

Seymour Hayden, Ph.D., *Associate Professor of Mathematics,*

Department Chairman

John F. Kennison, Ph.D., *Associate Professor of Mathematics*

Zalman Rubinstein, Ph.D., *Associate Professor of Mathematics*

John S. Stubbe, Ph.D., *Associate Professor of Mathematics*

Connor Lazarov, Ph.D., *Assistant Professor of Mathematics*

Norman Noble, Ph.D., *Assistant Professor of Mathematics*

Robert W. Kilmoyer, Jr., B.A., *Instructor in Mathematics*

UNDERGRADUATE PROGRAM

The department offers courses leading to a major in mathematics, courses necessary for the study of physical and certain social sciences and courses for the student wishing to learn the fundamental concepts of mathematics.

The departmental major requires five year-courses in mathematics, including either Mathematics 214 or Mathematics 215 and excluding Mathematics 11 and Mathematics 100, as well as two year-courses in a related field. Mathematics 13, 113a and 114b should normally be taken in the Sophomore year at the latest. Students showing particular promise in the first semester of Mathematics 12 are encouraged to take Mathematics 114b in their Freshman year. A student who qualifies may undertake Honors work in his Junior and Senior years.

In addition, at least 36 semester hours of a major's program must be selected from other than the following fields or courses: All Group A courses, economics 27, 100, 102, 160, 290, geography 247 and psychology 161 and 302.

A non-credit course in Fortran is offered each year. The courses in Probability and Statistics, Applied Mathematics, and Numerical Analysis include work with the Computer.

GRADUATE PROGRAM

The department offers courses leading to the degrees of Master of Arts and Doctor of Philosophy.

The requirements for the M.A.* are as follows: (1) Mathematics 300; (2) three courses beyond Mathematics 300, except that with the consent of the department, a student may substitute two courses below Mathematics 300 in place of one beyond; (3) a reading knowledge of a foreign language; (4) a Master's thesis; and (5) an oral examination.

The requirements for the Ph.D.*, in addition to the general requirements of the Graduate School, are as follows: (1) a student must pass a preliminary examination, which he would normally take after his second year of residence; the examination will be designed to test the student's knowledge and facility in the basic material of algebra, analysis, and topology; (2) he must also pass a qualifying examination in his field of specialization, normally to be taken at the end of his second or third year of residence; (3) the University Language requirement must be passed in either German, French, or

*All candidates for the M.A. and Ph.D. degrees in Mathematics will be required to serve as teaching assistants or as assistants in the Computing Center as part of the work for their degrees.

Russian, as well as a departmental examination in a second language; (4) the candidate for the Ph.D. must present an acceptable dissertation which is an original contribution to mathematics, and must pass a final oral examination defending his dissertation.

Graduate scholarships, teaching assistantships, Computing Center assistantships, and fellowships are available.

COURSES

F11. FUNDAMENTALS OF MATHEMATICS.

A logical development of elementary mathematics: including an axiomatic treatment of the real number system, arithmetic and elementary algebra, functions and relations, polynomials and topics from the theory of equations, introductory analytic geometry, and the exponential, logarithmic, and trigonometric functions. As a background, the arithmetic and algebra over arbitrary sets will first be considered. *Three semester hours each semester.*

Mr. Kennison and Staff.

F12. CALCULUS.

Introduction to differential and integral calculus; essential for further study in mathematics as well as for the study of applications in the natural and social sciences. *Three semester hours each semester.*

Mr. Lazarov, Mr. Stubbe and Staff.

13. INTERMEDIATE CALCULUS.

Geometric and physical applications of integration, sequences and series, three-dimensional analytic geometry, partial differentiation, multiple integrals, and a brief introduction to differential equations. Prerequisite: Mathematics 12. *Three semester hours each semester.*

Mr. Rubinstein.

100. UNDERGRADUATE SEMINAR IN MATHEMATICAL MODELS.

This is a seminar type course in which elementary examples of mathematical models are examined. Each student presents a model based on his own mathematical interpretation of any social, political, game-type or other situation. Means of applying mathematical games and models to the social and physical sciences are discussed. Knowledge of Set Theory desirable. Signature required. Not normally open to freshmen. *Two semester hours.*

Mr. Kennison.

113a. INTRODUCTION TO LINEAR ALGEBRA.

Mathematical induction, matrices, determinants, vector spaces. Euclidean vector spaces and quadratic forms. Prerequisite: Mathematics 12, or a B+ in Mathematics 11 plus consent of the instructor. Mathematics majors will normally take Mathematics 113a concurrently with Mathematics 13. *Three semester hours.*

Mr. Lazarov.

114b. INTRODUCTION TO ANALYSIS.

The real number system, sequences, limits of functions, continuity, uniform continuity, differentiability and elements of point-set topology. Prerequisite: Mathematics 12, or a grade of A- in one semester of Mathematics 12 plus consent of the instructor. Mathematics majors will normally take Mathematics 114b concurrently with Mathematics 13. *Three semester hours.*

Mr. Lazarov.

124a. ELEMENTARY THEORY OF NUMBERS.

Not offered, 1967-68.

A study of the properties of divisibility, prime numbers, congruences and residues. Prerequisite: Mathematics 12. Offered at the discretion of the department. *Three semester hours.*

134b. INTRODUCTION TO MATHEMATICAL LOGIC. Not offered, 1967-68.
Axiomatic development of sentential and restricted predicate calculus; theory of classes, relations and functions; introduction to cardinal and ordinal numbers. Offered at the discretion of the department. *Three semester hours.*

145a. DIFFERENTIAL GEOMETRY. Not offered, 1967-68.
Elements of the metric geometry of curves and surfaces in Euclidean space developed by methods of calculus and analytic geometry extended to three dimensions. Prerequisite or to be taken concurrently: Mathematics 13. Offered at the discretion of the department. *Three semester hours.*

146b. INTRODUCTION TO GEOMETRY. Not offered, 1967-68.
Topics from projective geometry, non-Euclidean geometry and the foundations of Euclidean geometry. Prerequisite: Mathematics 13 or a B— in Mathematics 12. Offered at the discretion of the department. *Three semester hours.*

150a. POINT-SET TOPOLOGY. Not offered, 1967-68.
Set theory, topological spaces, continuous functions and metric spaces. Prerequisite: Mathematics 13 or a B— in Mathematics 12. Offered at the discretion of the department. *Three semester hours.*

210. MATHEMATICAL STATISTICS. Not offered, 1967-68.
Elements of probability theory, frequency distribution test of significance, large and small sampling, analysis of variance. Prerequisite: Mathematics 13. Offered at the discretion of the department. *Three semester hours each semester.* Mr. Stubbe.

212. NUMERICAL ANALYSIS.
Calculus of finite differences, introduction to the theory of interpolation, error analysis, direct and iterative methods for solving equations and systems of equations. Prerequisite: Mathematics 13. *Three semester hours each semester.* Mr. Stubbe.

214. ADVANCED CALCULUS.
Topics selected from among partial differentiation, integration, infinite series, improper integrals. Fourier series, integral transform and the calculus of variations. Prerequisite: Mathematics 114b, or consent of the instructor. *Four semester hours each semester.* Mr. Noble.

215. MODERN ALGEBRA.
Introduction to the theory of groups, rings, integral domain, fields, vector spaces, matrices and related topics. Prerequisite: Mathematics 113a or consent of the instructor. *Four semester hours each semester.* Mr. Kilmoyer.

219. PROJECTIVE GEOMETRY. Not offered, 1967-68.
Synthetic and analytic projective geometry, including the projective theory of conics. Prerequisite: Mathematics 12 or consent of the instructor. Offered at the discretion of the department. *Three semester hours each semester.*

220. APPLIED MATHEMATICS. Not offered, 1967-68.
Ordinary and partial differential equations and their applications, vector analysis, infinite series, line and surface integrals, Bessel functions, Legendre polynomials and Fourier series, introduction to functions of a complex variable. Prerequisite: Mathematics 13. Offered in alternate years. *Three semester hours each semester.* Mr. Stubbe.

290. TOPICS IN ANALYSIS.

Content will be changed from year to year to fit the needs of graduate students. *Three semester hours each semester.* Staff.

291. TOPICS IN ALGEBRA.

Content will be changed from year to year to fit the needs of graduate students. *Three semester hours each semester.* Staff.

298. HONORS I.

Three semester hours each semester. Staff.

299. HONORS II.

300. FOUNDATIONS OF MATHEMATICS.

Three semester hours each semester. Staff.

313. POINT-SET TOPOLOGY.

Not offered, 1967-68.
Offered in alternate years. *Three semester hours each semester.* Mr. Noble.

316. FUNCTION OF A COMPLEX VARIABLE.

Not offered, 1967-68.
Analytic functions, line integrals, conformal mapping. Riemann surfaces. Prerequisite: Mathematics 214 or consent of the instructor. Offered in alternate years. *Three semester hours each semester.* Mr. Rubinstein.

318. FUNCTIONS OF A REAL VARIABLE.

Foundations of the real number system, algebra of sets, transfinite arithmetic, metric spaces, topological spaces, sequences and series, measure theory, differentiation and integration and functional analysis. Prerequisite: Mathematics 214; corequisite: Mathematics 300. *Three semester hours each semester.* Mr. Kennison.

321. ALGEBRAIC TOPOLOGY.

Not offered, 1967-68.
Introduction to algebraic topology including homotopy theory, singular and simplicial homology, and application to general spaces. Prerequisite: Mathematics 214 and 215. Offered at the discretion of the department. *Three semester hours each semester.*

323. UNIFORM SPACES

Mr. Lazarov.
Elementary theory, function spaces and the exponential law, mappings into polyhedra, compactifications, fine spaces, dimension theory. Prerequisite: Mathematics 313 or 318 or consent of the instructor. *Three semester hours each semester.* Mr. Noble.

325. ADVANCED MODERN ALGEBRA.

Galois theory, group theory, Wedderburn structure theorems for rings and linear algebras, introduction to algebraic number fields. Prerequisite: Mathematics 215; corequisite: Mathematics 300. *Three semester hours each semester.* Mr. Kilmoyer.

326. SELECTED TOPICS IN COMPLEX ANALYSIS.

Topics selected from the theory of univalent and multivalent functions, geometric function theory, zeros of polynomials and extremal polynomials. Prerequisites: Mathematics 316 or consent of the instructor. *Three semester hours.* Mr. Rubinstein.

330. MASTER'S THESIS.

335. SELECTED TOPICS IN ALGEBRA.

Prerequisites: Mathematics 325 or consent of the instructor. *Three semester hours.*

Mr. Hayden.

341. DIFFERENTIAL EQUATIONS. Not offered, 1967-68.
 Differential equations of the first order solvable by elementary methods. The linear equation of the first order. Integration factors. Elementary higher order equations. Existence and uniqueness theorems. The general theory of linear differential equations. Euler's equation. Systems of differential equations. Infinite series solutions of several order linear equations. The hypergeometric, Legendre and Bessel equations. Sturm-Liouville theory for second order differential equations. Green's function and eigenvalue problems.
 Elementary partial differential equations. Particular and general solutions. Initial and boundary conditions. Homogeneous and non-homogeneous linear equations of the second order. The Fourier series method. Existence, uniqueness and representation of solutions. Prerequisite: Mathematics 214 or consent of the instructor. Offered in alternate years. *Three semester hours each semester.* Mr. Rubinstein.
357. ADVANCED ABSTRACT ANALYSIS. Not offered, 1967-68.
 Rings of continuous functions. Categories. Reflective Functors. Prerequisite: Mathematics 318, or consent of the instructor. Offered in alternate years. *Three semester hours each semester.* Mr. Kennison.
365. DIFFERENTIAL GEOMETRY. Not offered, 1966-67.
 A study of differentiable manifolds. Prerequisite: Mathematics 214 and 215. Offered at the discretion of the department. *Three semester hours each semester.* Mr. Lazarov.
376. REPRESENTATION THEORY OF FINITE GROUPS. Not offered, 1967-68.
 Prerequisite: Mathematics 325 and consent of the instructor. *Three semester hours each semester.* Mr. Hayden.
381. SEMINAR IN COMPLEX VARIABLE. Not offered, 1967-68.
Three semester hours each semester. Mr. Rubinstein.
382. SEMINAR IN ABSTRACT ANALYSIS AND POINT-SET TOPOLOGY. Not offered, 1967-68.
Three semester hours each semester. Mr. Kennison.
383. SEMINAR IN ALGEBRA. Not offered, 1967-68.
Three semester hours each semester.
390. READINGS IN MATHEMATICS.
 Reading of the mathematical literature related to the student's research program. *Three semester hours each semester.* Staff.
391. RESEARCH IN MATHEMATICS.
 Direction of the Ph.D. dissertation. *Three semester hours each semester.* Staff.

Music

DEPARTMENT FACULTY

Relly Raffman, A.M., *Professor of Music, Department Chairman*

Wesley M. Fuller, M.Mu., *Associate Professor of Music**

Donald B. Lafferty, A.M., *Instructor in Music*

Ella Lou Dimmock, B.A., *Teaching Affiliate, Voice*

Evelyn Fuller, M.M., *Teaching Affiliate, Piano*

Elinor Preble, B.M., *Teaching Affiliate, Flute*

*On leave, 1967-68.

UNDERGRADUATE PROGRAM

The department offers courses designed to teach students how to listen to music intelligently, to develop a comprehension of music on its own terms and to acquaint students with representative works from various periods of music history.

To be admitted to the music major, a student must demonstrate through a written examination a knowledge of the fundamentals of music, and he must demonstrate no later than the beginning of the sophomore year the ability to read and perform simple keyboard works.

The music major includes the following courses:

Theory: 121a, 121b, 122a, 123b, 124a and 125b.

Music History: 12a, 112a, 13b, 113b, 14a, 114a, 15b, 115b, and 16b or 17b.

Associated Studies: a one-semester course in either esthetics or art.

In the senior year, students who wish to emphasize composition should elect Music 118; students who wish to emphasize music history should elect Music 128. In addition, all majors must satisfactorily complete 36 semester hours outside of Philosophy 13b (Esthetics), courses in fine arts, courses in literature and courses in European history.

Non-credit individual instruction in voice, flute and piano is offered by the department; other instrumental instruction will be provided upon sufficient demand. Payment for lessons is arranged on a semester basis and practice space is available at a nominal rental fee.

COURSES

F10a. INTRODUCTION TO MUSIC.

Designed for the non-major, this course is a prerequisite for entrance into Music 12 through 17, inclusive. No credit toward the major allowed. Open to freshmen. *Three semester hours.* Staff.

120a. INTRODUCTION TO MUSIC.

Special topics in music pedagogy. For majors only. *One semester hour.* Staff.

F121a. FUNDAMENTALS OF MUSIC.

Notation, ear-training, sight-singing and elementary melodic and harmonic organization. Two 75-minute periods weekly. *Two semester hours.* Mr. Raffman.

F121b. PRIMARY THEORY.

Open to freshmen. Prerequisite: 121a or consent of instructor. *Three semester hours.*

Mr. Raffman.

12a. MEDIEVAL AND RENAISSANCE PERIODS.

Not offered, 1967-68.

A survey of music before 1600. Prerequisite: 10a. Offered in alternate years. *Three semester hours.* Mr. Fuller.

- 112a. SPECIAL TOPICS IN MEDIEVAL AND RENAISSANCE MUSIC. Not offered, 1967-68.
Independent study. Required of all music majors, but open to anyone concurrently
enrolled in 12a. *One semester hour.* Mr. Fuller.
- 122a. THEORY: MODAL COUNTERPOINT. Not offered, 1967-68.
Offered in alternate years. Prerequisite: 121a. *Three semester hours.* Mr. Fuller.
- 13b. BAROQUE AND CLASSICAL PERIODS. Not offered, 1967-68.
A survey of music from 1600 to 1800. Offered in alternate years. *Three semester hours.*
Staff.
- 113b. SPECIAL TOPICS IN BAROQUE AND CLASSICAL MUSIC. Not offered, 1967-68.
Independent study. Required of all Music Majors, but open to anyone concurrently
enrolled in 13b. *One semester hour.* Staff.
- 123b. THEORY: 18TH CENTURY COUNTERPOINT. Not offered, 1967-68.
Canon and Fugue. Prerequisite: 121a. Offered in alternate years. *Three semester hours.*
Mr. Raffman.
- 14a. NINETEENTH CENTURY MUSIC.
A survey of the Romantic Period. Offered in alternate years. Prerequisite: 10a. *Three
semester hours.* Mr. Raffman.
- 114a. SPECIAL TOPICS IN 19TH CENTURY MUSIC.
Independent study. Required of all Music Majors, but open to anyone concurrently
enrolled in 14a. *One semester hour.* Mr. Raffman.
- 124a. THEORY: 19TH CENTURY PRACTICE.
Prerequisite: 121a. Offered in alternate years. *Three semester hours.* Mr. Fuller.
- 15b. TWENTIETH CENTURY MUSIC.
Prerequisite: 10a. Offered in alternate years. *Three semester hours.* Staff.
- 115b. SPECIAL TOPICS IN 20TH CENTURY MUSIC.
Independent study. Required of all music majors, but open to anyone concurrently
enrolled in 15b. *One semester hour.* Staff.
- 125b. THEORY: 20TH CENTURY PRACTICE.
Prerequisite: 121a and 124a. Offered in alternate years. *Three semester hours.* Staff.
- 16b. CHORAL MUSIC.
Selected choral compositions from all periods of music history will be analyzed with
score and recording. Because the study of performance problems is of key importance, a
number of the works will be performed by the class. Open to freshmen. Prerequisite:
10a, or permission of the instructor. Offered in alternate years. *Three semester hours.*
Mr. Fuller.
- 17b. OPERA.
With the help of translated librettos, recordings and selected readings, a study is made
of a group of operas representing all periods of music history, with emphasis on the
many solutions to the combination of music and drama. Prerequisite: 10a. Offered in
alternate years. *Three semester hours.* Mr. Fuller.
- 18b. SEMINAR: JAZZ. Not offered, 1967-68.
Limited to 10 students. Prerequisite: consent of instructor. *One semester hour.*
Mr. Raffman.

19b. MASTERWORKS.

Not offered, 1967-68.

An intensive study of selected works by Haydn, Beethoven, Berlioz, Ravel, Mahler, Bartok and Carter. Prerequisite: 10a or 121a. *Three semester hours.* Mr. Fuller.

118. SENIOR TUTORIAL IN MUSIC HISTORY.

Three semester hours each semester.

Staff.

128. SENIOR TUTORIAL IN COMPOSITION.

Three semester hours each semester.

Staff.

Philosophy

DEPARTMENT FACULTY

Jefferson A. White, Ph.D., *Associate Professor of Philosophy*Constantine P. Cavarinos, Ph.D., *Visiting Associate Professor of Philosophy*Gilbert Scott Markle, M.A., *Assistant Professor of Philosophy*Barbara R. Carlson, M.A., *Lecturer in Philosophy*

UNDERGRADUATE PROGRAM

The department offers courses to students who wish to broaden their perspective and trace relations among the various fields of knowledge and to students who wish to major in philosophy.

The major consists of at least 24 semester hours in philosophy and 18 additional hours in related fields. The latter are determined according to the student's special interest.

In addition, at least 36 semester hours of a major's program must be selected from *outside* the following fields: English, history, mathematics, music, philosophy, psychology and sociology. Course programs for majors require approval of the departmental chairman.

COURSES

F11a. LOGIC AND SCIENTIFIC METHOD.

Principles of valid reasoning and inductive methods and their application to problems of the natural and social sciences. Consideration of the relations between logic and problems of value. *Three semester hours.* Mrs. Carlson.

F12. PROBLEMS OF PHILOSOPHY.

Nature and method of philosophy. Application of philosophical method to contemporary personal and social problems. Detailed analysis of some typical problems in various fields of philosophy. *Three semester hours.* Mr. Cavarinos.

Philosophy 12 series is organized in four semester-courses, I, II, III and IV.

121a. HISTORY OF ANCIENT PHILOSOPHY I.

Movements of philosophical thought from their origins with the early Greeks through Plato and Aristotle. *Three semester hours.* Mr. White.

122b. HELLENISTIC AND MEDIEVAL PHILOSOPHY II.

Developments in Hellenistic and medieval philosophy from Epicureanism, Stoicism, Skepticism and Neo-Platonism through Augustine, Aquinas, and William of Occam to the attack on scholasticism. *Three semester hours.* Mr. White.

123b. HISTORY OF MODERN PHILOSOPHY III.

Major thinkers and philosophical movements from the beginnings of the modern period in Descartes to the 19th century. Prerequisite: three semester hours in philosophy or History 10. *Three semester hours.* Mr. Markle.

124a. HISTORY OF RECENT PHILOSOPHY IV.

Recent developments in philosophy, with emphasis on the historical roots of contemporary thought. Prerequisite: Philosophy 123a. *Three semester hours.* Mr. Markle.

13a. PROBLEMS OF ETHICS.

Consideration of important ethical theories to acquaint the student with problems and scope of ethics and to aid him in the formulation of an ethical outlook. Offered in alternate years. Open to juniors and seniors. *Three semester hours.* Mr. Cavarinos.

13b. SOCIAL PHILOSOPHY.

Principles underlying social structure and functions. Examination of the goals, purposes, norms and ideals of social process, and the relation of that process to the individual good. Offered in alternate years. Open to juniors and seniors. *Three semester hours.*

14b. HISTORY OF AMERICAN PHILOSOPHY.

Survey of important philosophical ideas in America with emphasis on their relationship to American experience. *Three semester hours.* Mrs. Carlson.
Mr. Cavarinos.

15b. PHILOSOPHY OF RELIGION.

The nature of religion as revealed by an examination of the history of world religions and representative types of contemporary religious philosophy. Open to juniors and seniors. Prerequisite: three semester hours in philosophy. *Three semester hours.*

16a. ESTHETICS.

The nature of art, the characteristics of esthetic experience, and the relation of art to the human enterprise as a whole. Special reference is made to representative figures in contemporary philosophy such as Santayana, Veron, Dewey, Weitz, Macdonald, Bosanquet, Langer, Hume, and T. H. Greene. Open to juniors and seniors. *Three semester hours.* Mrs. Carlson.
Mr. White.

16b. METAPHYSICS.

Clarification of the nature of metaphysical thinking and views of representative contemporary philosophers on the nature of space, time, causality, matter, force, self-identity, mind, body, and freedom. Open to juniors and seniors. Prerequisite: Philosophy 121 and 123. *Three semester hours.* Mr. White.

17a. PHILOSOPHY OF SCIENCE.

Problems of scientific explanation as seen in the evolving context of classical physics. Emphasis on 20th century developments. Prerequisite: three semester hours in philosophy. *Three semester hours.* Mr. Markle.

17b. SCIENCE AND THE HUMAN ENTERPRISE.

The place and possible limits of scientific explanation. Science as a tool and as investigation of the nature of things. Prerequisite: three semester hours in philosophy. *Three semester hours.* Mr. Markle.

201-4. SEMINAR IN PHILOSOPHY.

Advanced study of topics of central importance to philosophy. Whitehead, Kant, theory of value, problem of justice, mind and body. Prerequisites: two year-courses in philosophy, including 121 and 122. *Three semester hours each semester.* Staff.

HONORS IN PHILOSOPHY.

Advanced individual study of philosophic problems. Honors includes the preparation of an acceptable thesis and a comprehensive examination. Prerequisite: consent of the department. *Normally, six semester hours.* Mr. White.

EDUCATION 290b. PHILOSOPHY OF EDUCATION.

Description offered in the department statement under Education.

Physics

DEPARTMENT FACULTY

Roy S. Anderson, Ph.D., *Professor of Physics, Department Chairman*
 Earl E. Hays, Ph.D., *Professor (affiliate) of Physics*
 Roger P. Kohin, Ph.D., *Associate Professor of Physics*
 C. Alton Coulter, Ph.D., *Assistant Professor of Physics*
 John A. Davies, Ph.D., *Assistant Professor of Physics*
 Barbara C. Kohin, Ph.D., *Assistant Professor of Physics*
 Keshav N. Shrivastava, Ph.D., *Research Associate in Physics*

UNDERGRADUATE PROGRAM

The undergraduate program in physics is designed to prepare a student for a career in physics, to supplement the program of another science, or to introduce the field, as a part of liberal studies.

The physics major will provide a strong foundation for students preparing for graduate study or will assure proper training for teaching and professional work in physics. The major consists of Physics 101, 150a, 160b, 200, 206a, 207b, Mathematics 13, six additional semester hours in mathematics, beyond Mathematics 13, and six semester hours in chemistry, usually Chemistry 11. For students entering the University beginning September 1966, and thereafter, a revised physics major curriculum is offered. This major consists of Physics 12b, 130a, 140b, 145b, 150a (new), 155a, 160b, 200a, 202a, 207a, six additional semester hours in physics, Mathematics 13 and six additional semester hours in mathematics beyond Mathematics 13. Majors are strongly urged to take two years of either German or Russian. In addition, at least 36 semester hours of a major's program must be taken from other than Group A courses. (See Page 41 concerning "Groups.")

Qualified students are encouraged to participate in the physics honors program. During the junior and senior year the honors student conducts an individual experimental or theoretical research project under the guidance of a faculty member. This work is submitted to the Department as an honors thesis. Recommendation for a degree with Honors in Physics is determined by the quality of the thesis and the performance of the student on a comprehensive examination in physics. An Honors candidate must maintain an overall B— average in physics and mathematics courses. Further information about the Honors Program is available from the Department.

GRADUATE PROGRAM

Graduate programs are offered leading to the degrees of Master of Arts and Doctor of Philosophy. A doctoral program in Chemical Physics, offered jointly with the Department of Chemistry, is also available.

Departmental research is being conducted in both theoretical and experimental physics. There are theoretical research programs in solid state physics and quantum electrodynamics. Experimental programs include the use of electron spin resonance spectroscopy to investigate radiation damage in solids and the nature of ferroelectricity. In addition, theoretical and experimental research in oceanography is offered in cooperation with the Woods Hole Oceanographic Institution.

Graduate scholarships, teaching and research assistantships, and various research fellowships are available. Information on these awards will be furnished on request to the Department of Physics. First year graduate students usually receive teaching assistantships and a tuition scholarship. Following the first academic year, graduate students may be awarded twelve-month research assistantships with tuition scholarships. Research conducted while on research assistantships may constitute graduate thesis or dissertation work.

All graduate students are required to pass the Physics Qualifying Examination which is designed to test the student's ability to solve problems at the upper-class undergraduate level. One year of teaching apprenticeship, or its equivalent, is required of all candidates for advanced degrees.

In addition to the requirements of the Graduate School, students in the M.A. program are generally responsible for the material covered in Physics 301, 304, and 305.

Students in the Ph.D. program, in addition to satisfying the Graduate School requirements, will normally pass courses totalling at least 48 semester hours. This includes credit for seminars, a maximum of twelve semester hours for research, and at least eighteen semester hours in courses given by other departments, twelve of which must be in the field of mathematics. Students are responsible for the material covered in Physics 301, 304, and 305.

Students in the doctoral program take Part I of the Physics Preliminary Examination no later than the beginning of the third year of graduate study. This is a comprehensive written and oral examination covering classical and modern physics at the graduate level. Part II is an oral examination of a research proposal presented by the student at a departmental colloquium.

Doctoral students must pass the University language examination in either German or Russian. This examination is normally taken in the fall of the second year of graduate study.

A detailed description of graduate programs and requirements is available from the Department of Physics.

COURSES

F10a. CONCEPTS OF CLASSICAL PHYSICS.

An introduction to the theories and concepts of mechanics, thermodynamics, and electrodynamics. Three lectures, one laboratory, and one conference per week. Prerequisite: consent of the instructor or three years of high school mathematics, including algebra and trigonometry. (Formerly designated as Physics 11a, General Physics.) *Four semester hours.*
Mr. Davies.

11b. CONCEPTS OF MODERN PHYSICS.

An introduction to the theories of relativity, statistical mechanics, and quantum mechanics, with elementary applications. Normally a terminal course. Students intending to take more than one year of physics should take Physics 12b following Physics 10a. Three

lectures, one laboratory, and one conference per week. Prerequisite: Physics 10a. *Four semester hours.* Mrs. Kohin.

12b. MECHANICS AND RELATIVITY.

Particle dynamics in inertial reference frames. Relativity. Required for a major in physics. Prerequisite to all more advanced courses in physics. Three lectures, one laboratory, and one conference per week. Prerequisite: Physics 10a or equivalent, with Mathematics 12 concurrently. *Four semester hours.* Mr. Kohin.

130a. ELECTRICITY AND MAGNETISM.

Phenomenological development of Maxwell's equations. Electric and magnetic properties of materials. Electric circuit theory. Three lectures, one laboratory, and one conference per week. Prerequisite: Physics 12b with Mathematics 13 concurrently. *Four semester hours.* Mrs. Kohin.

140b. MODERN PHYSICS.

A survey course treating contemporary ideas. An introduction to the quantum theory, with applications to atoms, nuclei, particles and the solid state. Prerequisite: Physics 130a. *Three semester hours.* Mr. Anderson.

145b. MODERN PHYSICS LABORATORY.

Experiments in modern physics. Co-requisite: Physics 140b. One laboratory per week. *One semester hour.* Mr. Anderson.

150a. MECHANICS.

Advanced methods in mechanics, with emphasis on the motion of rigid bodies. Lagrange's equations. Required of physics majors. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Anderson.

150a. (NEW) WAVES AND OSCILLATIONS.

To be offered, 1968-69.

Oscillating mechanical and electrical systems. Electromagnetic and matter waves. Applications of the Schroedinger wave equation. Prerequisites: Mathematics 13 and Physics 130a. *Three semester hours.*

155a. WAVES AND OSCILLATIONS LABORATORY.

To be offered, 1968-69.

Experiments involving oscillating systems. The experimental study of optics. Co-requisite: Physics 150a. *One semester hour.*

160b. ELECTROMAGNETISM.

The mathematical theory of electricity and magnetism. Fields and potentials. Maxwell's equations. Electromagnetic waves. Required of physics majors. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Anderson.

200. ADVANCED PHYSICAL MEASUREMENTS.

Laboratory in atomic, molecular, nuclear and solid-state physics. Three hours each week, throughout the year. Required of physics majors. *One semester hour each semester.*

Mr. Kohin.

202a. THERMODYNAMICS AND STATISTICS.

Not offered, 1967-68.

The laws of thermodynamics. Kinetic theory and particle statistics. Four lectures. Prerequisite: Mathematics 13 and Physics 140b. Offered in alternate years. *Four semester hours.*

205a. ELECTRONIC DEVICES AND CIRCUITS.

Principles of electron tubes and transistors, with emphasis on design of electronic circuits. Three lectures and one laboratory per week. Prerequisite: consent of the instructor. Offered in alternate years. *Four semester hours.* Mr. Anderson.

206a. MODERN PHYSICS.

An introduction to the quantum nature of molecules, atoms and nuclei. Special relativity. The old quantum theory. The correspondence principle. Wave-particle duality. The uncertainty principle. The wave equation. Required of physics majors. Prerequisite: Physics 160b and Mathematics 13 or consent of the instructor. *Three semester hours.* Mr. Kohin.

207b. QUANTUM PHYSICS.

An introduction to quantum wave mechanics. Solutions of the Schrodinger equation. Operator techniques. Angular momenta. Approximation methods. Spectroscopy. Required of physics majors. Prerequisite: Physics 206a. *Three semester hours.* Mr. Coulter.

208b. INTRODUCTION TO THE SOLID STATE.

Crystal structure: symmetry and space groups. Chemical bonding: ionic and covalent crystals. Thermal and elastic properties. The band theory of metals and semi-conductors. Dielectric and magnetic properties. Low temperature properties. Superconductivity. Prerequisite: Mathematics 13 and the consent of the instructor. Offered in alternate years. *Three semester hours.* Mr. Anderson.

209a. INTRODUCTION TO THE NUCLEUS.

Waves and particles, natural radioactivity, detection instruments, nuclear structure, nuclear transformations, neutron physics, fission and fusion, mesons, pions, and strange particles. Three lectures and one laboratory per week. Prerequisite: Physics 140b or consent of the instructor. Offered in alternate years. *Four semester hours.* Mr. Hays.

218. PHYSICS AND THE EARTH SCIENCES.

The application of physics to problems in oceanography, seismology, and the atmosphere, with emphasis on the physics problems common to all. Selected readings are utilized. *Two semester hours each semester.* Mr. Hays.

230. SPECIAL TOPICS IN PHYSICS.

Independent studies in physics to provide for special needs. Individual experimental or theoretical projects are encouraged. *Variable credit.* Staff.

235. HONORS.

Independent experimental or theoretical research in physics. *Three semester hours each semester.* Staff.

301. ADVANCED MECHANICS.

Lagrangian and Hamiltonian formulations. Kinematics and dynamics of rigid body motion. Canonical transformations. Hamilton-Jacobi theory. Introduction to statistical mechanics. *Three semester hours each semester.* Mrs. Kohin.

304. ELECTRODYNAMICS.

Maxwell's equations. The special theory of relativity. Electromagnetic radiation. Boundary value problems. Lagrangian formulation of electrodynamics. *Three semester hours each semester.* Mr. Coulter.

305. QUANTUM MECHANICS.

The superposition principle. Linear vector spaces. Electron spin. The Schrödinger and Heisenberg pictures. Angular momentum. Scattering theory. Time-independent and time-dependent perturbation theories. Many particle systems. Non-relativistic quantum field theory. Prerequisite: Physics 207 or equivalent. *Four semester hours each semester.*

Mr. Davies.

308. THEORY OF ATOMIC AND MOLECULAR SPECTRA.

Not offered, 1967-68.

The electronic configuration of atoms: the Pauli principle and the building-up principle. Fine structure and the spinning electron. The Zeeman and Paschen-Back effects. Nuclear effects: hyperfine structure. The structure and properties of molecules as revealed by rotational, vibrational, and electronic spectra. Covalent and ionic bonds. Prerequisite: Physics 305 or consent of instructor. *Two semester hours each semester.*

Mr. Kohin.

309. MAGNETIC RESONANCE.

The theory of the electron spin and nuclear magnetic resonance experiments, particularly in solids. The spin Hamiltonian and the magnetic interaction between particles. Chemical bonds and their description by the molecular orbital method. Prerequisite: Physics 308. *Two semester hours each semester.*

Mr. Kohin.

310. QUANTUM ELECTRODYNAMICS.

Not offered, 1967-68.

The quantization of relativistic fields. Electron and photon fields. Interactions of fields. The S-matrix. Feynman diagrams. Renormalization. Applications. Prerequisite: Physics 305 or equivalent. *Two semester hours each semester.*

Mr. Davies.

311. ELEMENTARY PARTICLE THEORY.

Not offered, 1967-68.

The present state of experimental knowledge. S-matrix theory. Kinematics of scattering processes. Regge poles. Approximate symmetries of strong interactions. Prerequisite: Physics 305 or equivalent. *Two semester hours each semester.*

Mr. Coulter.

312b. APPLICATIONS OF GROUP REPRESENTATIONS TO PHYSICS.

Not offered, 1967-68.

Representation theory for finite groups. Application to crystallographic point groups. Representation of compact continuous groups. The rotation group with applications to atomic structure. $SU(n)$ with applications to elementary particle theory. Finite-dimensional representations of the Lorentz group. Prerequisite: Physics 207. *Three semester hours.*

Mr. Coulter.

330. CURRENT PROBLEMS IN PHYSICS.

A specific topic in experimental physics is considered at the research level. Topics are selected on the basis of current interest. *Variable credit.*

Staff.

335. TOPICS IN THEORETICAL PHYSICS.

An area of theoretical physics, chosen principally for students conducting theoretical research. Topics selected, as required, to emphasize special research areas or methods. *Variable credit.*

Staff.

340. COLLOQUIUM.

Weekly lectures on various topics of current interest. *One semester hour each semester.*

Staff.

350. RESEARCH.

Variable credit.

Staff.

Psychology

DEPARTMENT FACULTY

- Seymour Wapner, Ph.D., *G. Stanley Hall Professor of Genetic Psychology, Department Chairman*
 Robert W. Baker, Ph.D., *Professor of Psychology*
 Walter H. Crockett, Ph.D., *Professor of Psychology*
 Tamara Dembo, Ph.D., *Professor of Psychology*
 Bernard Kaplan, Ph.D., *Professor of Psychology*
 Morton Wiener, Ph.D., *Professor of Psychology*
 Joachim F. Wohlwill, Ph.D., *Professor of Psychology*
 Roger Bibace, Ph.D., *Associate Professor of Psychology*
 Donald M. Krus, Ph.D., *Associate Professor of Psychology*
 Sebastiano Santostefano, Ph.D., *Associate Professor of Psychology*
 Henry D. Bates, Ph.D., *Assistant Professor of Psychology*
 James D. Laird, Ph.D., *Assistant Professor of Psychology*
 Donald G. Stein, Ph.D., *Assistant Professor of Psychology*
 David A. Stevens, Ph.D., *Assistant Professor of Psychology*
 Ina C. Uzgiris, Ph.D., *Assistant Professor of Psychology*
 Clemens E. Benda, M.D., *Professor (Affiliate) of Psychology*
 Harold Goodglass, Ph.D., *Professor (Affiliate) of Psychology*
 David Moriarty, M.D., *Professor (Affiliate) of Psychology*
 Donald Broverman, Ph.D., *Associate Professor (Affiliate) of Psychology*
 Richard Rablen, Ph.D., *Associate Professor (Affiliate) of Psychology*
 Ralph Rothstein, Ph.D., *Associate Professor (Affiliate) of Psychology*
 William Vogel, Ph.D., *Associate Professor (Affiliate) of Psychology*
 Arthur J. Bindman, Ph.D., *Lecturer in Psychology*
 Norman Geschwind, M.D., *Lecturer in Psychology*
 Edward L. Klaiber, M.D., *Lecturer in Psychology*
 Oscar Resnick, Ph.D., *Lecturer in Psychology*
 Peter H. Wolff, M.D., *Lecturer in Psychology*
 Melvin Barton, Ph.D., *Psychology Consultant to the Psychological Service Center*
 Polly Deweese, M.S., *Social Work Consultant to the Psychological Service Center*
 Victor H. Pentlarge, M.D., *Psychiatry Consultant to the Psychological Service Center*
 Bernard P. Rosenblatt, Ph.D., *Psychology Consultant to the Psychological Service Center*
 Malcolm Sills, M.D., *Psychiatry Consultant to the Psychological Service Center*

UNDERGRADUATE PROGRAM

The department offers courses for students majoring in psychology, majors in allied fields and students wishing an orientation to the field of psychology as part of their general education.

Psychology 11 is prerequisite to all other psychology courses. Majors are required to take Psychology 11 and a minimum of two laboratory courses (Psych. 201a, 202b, 203a or

203b, 204a or 204b, 210b, 211a, 222b, 236b). Of the two courses at least one must be 203a, or 204a (b). Permission of the instructor is required for each course in the Experimental Psychology grouping. In addition, each of these courses requires Psychology 160b and 161a or its equivalent (Psychology 161a may be taken concurrently); this requirement may be waived with permission of the instructor. Students preparing for graduate work should obtain a reading knowledge of French and German.

In addition, at least 36 semester hours of a major's program must be selected from other than the following fields or courses: All biology, education, linguistics, philosophy, psychology and sociology courses; and selected courses from economics, geography, government and mathematics. (See department brochure for specific courses.)

GRADUATE PROGRAM

The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. A Master of Arts degree, based on an experimental thesis, ordinarily completed within the first two years of graduate work, is a requirement for admission to candidacy for the Ph.D. degree. In addition, there is the requirement that every graduate student participate in the Teaching Apprenticeship Program of the department. Credit hours are not ordinarily assigned to graduate courses; however, all graduate courses carry the equivalent of three semester hours each semester.

Master of Arts: The customary program is five courses, including experimental psychology, statistical methods and three additional courses, supplemented by the writing of a thesis in the area of special interest.

Doctor of Philosophy: The student is required to pass with distinction five courses during the first year of graduate study and a minimum of four courses during the second year. The University language requirement must be met by a knowledge of French, German or Russian. He is required, normally at the end of the second year, through written examination, to demonstrate his competence in psychology as a whole and in an area of specialization. In addition, the student is required to demonstrate his ability to conduct independent research as evidenced by the presentation of an acceptable dissertation. Research for the dissertation should normally be completed during the fourth year at the University; however, the length of the program will vary depending upon individual circumstances. At a final oral examination a student is required to defend his dissertation and to show his competence in the general field of psychology and in his area of specialization.

The overall aim of the graduate program is to provide the student with a general, integrated background covering the various areas of psychology. Within this emphasis more specialized training—with special stress on experimental analysis—is available in the following areas: perception, physiological learning, thinking and problem-solving, language, social, and personality. The department maintains, in addition to general experimental laboratories, specialized facilities for research and training in comparative, learning, physiological, perception, child and social psychology.

There are also three more formalized programs which provide specialized training in the areas of Clinical, Developmental and Rehabilitation Psychology.

Clinical Psychology Program. The department offers a four-year A.P.A.-approved program in clinical psychology leading to the degree of Doctor of Philosophy. Beyond the standards of proficiency in the general field of psychology expected of all students, the student in the Clinical Program will be required to demonstrate special mastery in

the understanding of concepts in the clinical area and in the use of clinical methods. One year of internship is included in this four-year program. Provision is made for a wide variety of practical experiences in cooperating institutions, clinics and agencies. There are over 20 institutions and agencies in Worcester, Boston, Providence and surrounding areas which cooperate in providing such practicum and research facilities. In addition to the one-year internship, all students in the Clinical Program obtain a variety of practicum experiences in the Clark University Psychological Service Center throughout their enrollment in the graduate program. For further information, write to the director of the program: *Dr. Morton Wiener*.

The Psychological Service Center, directed by *Dr. Roger Bibace*, is operated in connection with the Clinical Psychology Program. For further information concerning the Center, see that section in the catalog.

Post-doctoral training in clinical psychology is available. It aims to provide opportunities for clinical psychologists to develop further their clinical and research skills. Facilities of the Department, of Gardner State Hospital, and other agencies are utilized.

Developmental Psychology Program. This program is designed to train students in the comparative and experimental analysis of behavioral development. It emphasizes not only the study of human development over a wide age range, but also stresses the application of developmental principles, concepts and methods to problems of general psychology, psychopathology, social psychology, etc. For further information, write to the director of the program: *Dr. Joachim F. Wohlwill*.

Rehabilitation Research Training Program. In conjunction with all other areas of specialization, rehabilitation research training is available. Such training usually begins after the first two years of graduate work. This training is designed to prepare students for investigation of psychological problems as they occur in everyday life. Emphasis on development of novel techniques and concepts is a main feature of the training. An integral part of the program is an apprenticeship-practicum during which the various phases of research in real-life settings are examined under the guidance of a staff member. This program is especially pertinent to those who are interested in social-emotional and value problems of handicapped and non-handicapped people. For further information, write to the director of the program: *Dr. Tamara Dembo*.

Financial Aid. In addition to University scholarships, fellowships, teaching assistantships, and stipends, the department has available such forms of financial support as United States Public Health Service and Vocational Rehabilitation Administration training stipends, Veterans Administration assistantships and stipends, NDEA and NSF Traineeships, and research assistantships.

THE HEINZ WERNER INSTITUTE OF DEVELOPMENTAL PSYCHOLOGY

Associated with the department is the Heinz Werner Institute of Developmental Psychology, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on post-doctoral levels in the comparative-developmental approach to behavior. Information concerning post-doctoral work at the Institute may be obtained by writing to *Dr. Bernard Kaplan*.

COURSES

F11a. GENERAL PSYCHOLOGY.

Introduction to the principles of human behavior. *Three semester hours.* Mr. Wapner.

F11b. GENERAL PSYCHOLOGY.

Introduction to the principles of human behavior. *Three semester hours.*

Messrs. Baker, Bates, Kaplan, Laird, Santostefano, Stein and Stevens.

12b. PSYCHOANALYSIS AND THE CONCEPT OF MAN.

Psychoanalysis will be considered in relation to contemporary concepts of man. Discussions will center on the implications of psychoanalytic thought for the following areas: mental illness, childrearing practices, educational philosophy, learning theory, religion, philosophy, art, law, prejudice, and war. *Three semester hours.* Mr. Moriarty.

103b. ABNORMAL PERSONALITY.

An analysis of the concepts used to explain development of the abnormal personality and a survey of the major types of deviant behavior. Prerequisite: Psychology 172a. *Three semester hours.* Mr. Wiener.

125a. PSYCHOLOGY OF LANGUAGE.

A psychological analysis of the use of symbols in language, dreams, and myth. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Kaplan.

150a. INTRODUCTION TO CHILD PSYCHOLOGY: Physical and Intellectual Development.

The normal development of the child from infancy up to adolescence, with emphasis on the areas of physical and motor development, cognitive processes and language, and emotional and fantasy life. *Three semester hours.* Mrs. Uzgis.

150b. INTRODUCTION TO CHILD PSYCHOLOGY: Personality and Social Development of the Child.

The development of the child's personality and interpersonal behavior, in relation to family, peer group and culture. *Three semester hours.* Mrs. Uzgis.

160b. INTRODUCTION TO QUANTITATIVE METHODS IN PSYCHOLOGY.

Problems of psychological measurement and statistical evaluation of psychological data, at a descriptive level. (To be taken by all prospective majors in their sophomore year.) *Three semester hours.* Mr. Krus.

161a. ADVANCED STATISTICAL METHODS IN PSYCHOLOGY.

Major principles and techniques of correlational analysis and statistical inference. (To be taken by all majors in their junior year.) *Three semester hours.* Mr. Wohlwill.

170b. SOCIAL PSYCHOLOGY.

The role of social factors in the behavior of individuals and of groups, including such topics as attitudes, prejudice, leadership and personality and culture. *Three semester hours.* Mr. Laird.

172a. PSYCHOLOGY OF PERSONALITY.

Consideration of various theoretical approaches, including psychoanalytic, behaviorist and self theories, and of research work in areas such as anxiety, stress, unconscious processes, emotion, and motivation. *Three semester hours.* Mr. Laird.

201a. LABORATORY IN SOCIAL PSYCHOLOGY.

Investigation of such phenomena as small group interaction, interpersonal perception,

and attitude measurement and change. Prescribed experiments will be conducted on a series of problems. Prerequisite: Psychology 160b, 161a and 170b. *Four semester hours.*

202a. PSYCHOLOGY OF THINKING.

Mr. Crockett.

Types of thought processes and methods of investigating them, with emphasis on concept formation, imagination, creative thought, reasoning and problem solving. *Three semester hours.*

Mr. Bates.

202b. LABORATORY IN THINKING.

Investigation of selected problems in such areas as association, set, concept attainment, verbal behavior, and problem solving. Consideration of methodological and theoretical issues in the context of prescribed and original studies. Prerequisite: Psychology 160b, 161a, 202a. *Four semester hours.*

Mr. Bates.

203a. LABORATORY IN PERCEPTION.

The Laboratory Course in Perception will include investigation of sensory and perceptual phenomena in a variety of sense modalities. Theoretical and methodological issues will be considered in the context of specific experimentation. Prerequisite: Psychology 160b and 161a. *Four semester hours.*

Mr. Krus.

204a, b. LABORATORY IN LEARNING.

Methods and findings in the study of learning, emphasizing their relation to theoretical issues. Prerequisite: Psychology 160b and 161a. (One semester course offered each semester.) *Four semester hours.*

Mr. Stevens.

209a. DEVELOPMENTAL APPROACHES TO BEHAVIOR.

Not offered, 1967-68.

A critical examination of presuppositions, methods, concepts and empirical inquiries of those concerned with the development of behavioral systems. Implications of developmental conceptualization for all of the life sciences will be discussed. Psychological theories of Freud, Piaget and Werner will be given special emphasis. *Four semester hours.*

Mr. Kaplan.

209b. DEVELOPMENTAL APPROACHES TO BEHAVIOR.

Not offered, 1967-68.

A seminar on selected theoretical and methodological issues pertaining to the developmental analysis of behavior. *Three semester hours.*

Mr. Kaplan.

210b. LABORATORY IN DEVELOPMENTAL PSYCHOLOGY.

Not offered, 1967-68.

The Laboratory Course in Developmental Psychology will be aimed at giving students direct experience with the phenomena described by Heinz Werner and Jean Piaget. The course will exemplify concepts such as syncretism in different populations (young children, schizophrenics, mentally retarded, etc.) and at different developmental levels, for instance, at the level of action or of thought. (Students analyze cognitive processes, and conduct an experiment.) Prerequisite: Psychology 160b, 161a, and 209a. *Four semester hours.*

Mr. Bibace.

211a. DEVELOPMENTAL APPROACHES TO LEARNING.

Applications of developmental psychology to slow learners in the classroom. Particular attention is paid to the work of Kephart, Rabinovitch and Cruickshank. Practicum work with children is required. Prerequisite: Psychology 160b, 209a. *Three semester hours.*

Mr. Bibace.

220a. MATHEMATICAL APPROACHES TO PSYCHOLOGY.

Not offered, 1967-68.

Intensive analysis of several mathematical models used in psychology. Offered in alternate years. Prerequisite: Mathematics 12 or consent of the instructor. *Three semester hours.*

Mr. Crockett.

222a. PHYSIOLOGICAL PSYCHOLOGY: INTRODUCTORY.

A survey of current problems and theory in physiological psychology. Emphasis will be placed upon the physiological bases of motivation, emotion, learning, perception and memory. Theoretical models of CNS activity will also be discussed. Prerequisite: Psychology 160b, 161a. *Three semester hours.* Mr. Stein.

222b. LABORATORY IN PHYSIOLOGICAL PSYCHOLOGY.

Introduction to methods and techniques used to study the physiological bases of behavior. The student will participate in nerve stimulation and recording, electrode implantation, brain lesions, chemical and electrical stimulation of the brain, anatomy and neuro-histological examination. Individual and group research projects will be encouraged. Lecture and demonstrations. Prerequisites: Introductory physiological psychology; consent of the instructor. *Four semester hours.* Mr. Stein.

225a. SEMINAR IN REHABILITATION PSYCHOLOGY.

Psychological problems in everyday life situations, such as problems of physically disabled, mentally retarded, the aged, the poor, etc., will serve as topics. The primary focus is interpersonal relationships and value problems. *Two semester hours.* Miss Dembo.

226b. SEMINAR IN INDIVIDUAL DIFFERENCES.

Not offered, 1967-68.

An examination of the evidence for and explanation of individual differences in both cognitive functioning and personality. Particular attention will be given to the problem of sex differences. *Two semester hours.* To be announced.

231b. SEMINAR IN THE HISTORY OF PSYCHOLOGY.

Historical development of theories and methods in psychology. Prerequisite: consent of the instructor. *Two semester hours.* Mr. Kaplan.

232b. SEMINAR IN MODERN PSYCHOLOGICAL THEORIES.

Not offered, 1967-68.

Comparisons and evaluations of various modern theories in psychology. Prerequisite: consent of the instructor. *Two semester hours.* Mr. Bates.

236b. LABORATORY IN CHILD PSYCHOLOGY.

Survey of research methods used in the study of children, with particular emphasis on observational techniques. Lecture: 2 hours; Laboratory: 3 hours. Prerequisite: Psychology 160b, 161a, 150a or 150b. *Four semester hours.* Mr. Wohlwill.

237b. INTERPERSONAL PERCEPTION.

A detailed examination of various theoretical approaches to phenomena of interpersonal perception. Included will be the predictions of role theory, balance and consistency theories, and various personality theories. The empirical evidence relative to these predictions will be discussed; particular attention will be given observations that are not readily interpretable by social psychological theories. *Four semester hours.* Mr. Crockett.

296. DIRECTED RESEARCH IN PSYCHOLOGY.

Independent research for qualified students not in the honors program. (Open to seniors and, in exceptional circumstances, to juniors with the approval of the staff member who will direct their study.) *Three semester hours each semester.* Staff.

297. DIRECTED READINGS IN PSYCHOLOGY.

Independent study for qualified students not in the honors program. (Open to seniors and, in exceptional circumstances, to juniors with the approval of the staff member who will direct their study.) *Three semester hours each semester.* Staff.

298. HONORS IN PSYCHOLOGY: Junior year.

During the Fall semester, junior honors students will meet in weekly seminars conducted by members of the staff to familiarize themselves with the major fields within the discipline of psychology, to plan their survey of the literature in an area of interest to them, and to discuss their readings. During the Spring semester, students will carry out independent intensive readings on a particular problem of interest to them, in individual consultation with a member of the staff. *Three semester hours each semester.* Staff.

299. HONORS IN PSYCHOLOGY: Senior year.

Students will carry out a research project under the direction of a member of the staff. *Four semester hours each semester.* Staff.

301a. EXPERIMENTAL METHOD IN PSYCHOLOGY.

General problems of experimental method will be considered in the context of original research projects conducted by the students. Mr. Wapner.

301b. EXPERIMENTAL APPROACHES TO PERCEPTION.

Examination of a variety of experimental-theoretical approaches to the study of perception. Mr. Wapner.

302. STATISTICAL METHODS.

Descriptive statistics, statistical inference and experimental design in psychology.

Mr. Crockett.

304a. PHYSIOLOGICAL ASPECTS OF BEHAVIOR, I.

Neuro-anatomy as related to behavior. Offered in alternate years.

Not offered, 1967-68.

To be announced.

305b. PSYCHOPHYSIOLOGY OF SENSORY PROCESSES.

Mr. Vogel.

306b. PSYCHOBIOLOGICAL FOUNDATIONS OF BEHAVIOR.

Not offered, 1967-68.

To be announced.

307a. PHYSIOLOGICAL PSYCHOLOGY: ADVANCED.

A survey of current problems, theories and controversies in physiological psychology. Course orientation will be similar to the introductory course with more attention to critical experiments and controversies. Also considered will be the neuroanatomy and neurophysiology of important CNS structures. Prerequisites: Knowledge of experimental method in psychology; previous experience in either perception, learning or comparative. Mr. Stein.

307b. SEMINAR IN SELECTED PROBLEMS IN PHYSIOLOGICAL PSYCHOLOGY.

Critical evaluation by participants of important issues in the area of physiological psychology. Students will present material in their area of interest in group discussions and analysis. Mr. Stein.

309. APPRENTICESHIP IN REHABILITATION: INTRODUCTORY, I.

Miss Dembo.

310. APPRENTICESHIP IN REHABILITATION: INTRODUCTORY, II.

Miss Dembo.

311a. CLINICAL METHODS, I.

Theory, administration, scoring and interpretation of clinical-psychological tests, objective and projective, with special emphasis on analysis of cognitive functioning of adults.

Messrs. Baker and Laird.

311b. CLINICAL METHODS, I.

Theory, administration, scoring and interpretation of clinical-psychological tests, objective and projective, with special emphasis on analysis of the cognitive functioning of children. Mr. Santostefano.

- 312b. THEORIES OF DEVIANT BEHAVIOR.
Deviant behavior as viewed by various theories. Clinical and experimental evidence is examined. Mr. Bibace.
- 313b. PRINCIPLES AND CONCEPTS UNDERLYING PSYCHOLOGICAL TESTS.
Problems of psychological assessment by non-projective tests. Mr. Broverman.
- 315a. ADVANCED CHILD PSYCHOLOGY: GENERAL-EXPERIMENTAL.
The experimental study of basic processes of child behavior (perception, learning, thinking, etc.) and of major dimensions of developmental change. Mr. Wohlwill.
- 315b. ADVANCED CHILD PSYCHOLOGY: PERSONALITY-SOCIAL.
Study of the child's personality and social development with particular attention to research concerning itself with antecedent-consequent relationships. Mrs. Uzgis.
- 316a. RESEARCH METHODS IN THE STUDY OF CHILDREN.
Survey of methods used in the study of children, with emphasis on the measurement of personality characteristics and on observational techniques. Offered in alternate years. Mrs. Uzgis.
- 316b. METHODOLOGICAL PROBLEMS IN DEVELOPMENTAL PSYCHOLOGY.
Questions of scientific method, research strategy, quantitative analysis, etc., arising in developmental research, with particular reference to the study of developmental change in behavior. Offered in alternate years. Mr. Wohlwill.
- 317a. BEHAVIOR IN INFANCY.
Offered in alternate years. Not offered, 1967-68. Mr. Wolff.
318. SEMINAR IN PSYCHOLOGY OF INTERPERSONAL RELATIONSHIPS AND REHABILITATION.
Not offered, 1967-68.
Value problems pertinent to interpersonal relations will be discussed, including value possessions, value losses, regaining of values and adjustment to value losses. Offered in alternate years. Miss Dembo.
319. SEMINAR IN TOPOLOGICAL PSYCHOLOGY AND REHABILITATION.
Offered in alternate years. Miss Dembo.
320. ADVANCED SEMINAR ON ORGANISMIC-DEVELOPMENTAL APPROACHES TO BEHAVIOR.
Not offered, 1967-68.
Basic categories of the organismic-developmental approach to life sciences, with examination of the application of these categories to a wide range of problem areas in psychology. Mr. Kaplan.
321. HIGHER MENTAL PROCESSES.
Theory and experimental research pertaining to such functions as remembering, classifying, problem-solving, reasoning, concept-forming, symbolization, etc. Mr. Kaplan.
323. PSYCHOLOGY OF LEARNING.
Theoretical viewpoints and experiments in the field of learning. Mr. Stevens.
324. THEORIES OF PERSONALITY.
Comparison of various theoretical approaches to the study of personality. Mr. Wiener.
325. ADVANCED SOCIAL PSYCHOLOGY.
Intensive analysis of various theoretical systems in social psychology. Mr. Crockett.

327b. THE BIOLOGICAL ASPECTS OF HUMAN DEVELOPMENT. Mr. Klaiber.

328b. COMPARATIVE ANIMAL BEHAVIOR.

Theories and research in ethology and comparative psychology, including problems of causation, development and evolution, will be discussed. *Three semester hours.*

Mr. Stevens.

329a. PSYCHOANALYTIC EGO PSYCHOLOGY.

After a systematic review of Freud's major assumptions, propositions, and concepts, emphasis is given to select psychoanalytic writings since 1940 concerned with meta-psychology, concepts of ego and adaptation, and psychoanalysis as a developmental psychology.

Mr. Santostefano.

331. CLINICAL METHODS, II.

Application of various clinical methods in the assessment of personality.

Mr. Goodglass and Clinical Staff.

332a. THEORIES OF PSYCHOTHERAPY.

Comparison of various theoretical approaches to psychotherapy.

Mr. Wiener.

333b. LEARNING APPROACHES TO PSYCHOTHERAPY.

A critical survey of the applications of contemporary learning theory principles and empirical findings to the modification of deviant behavior. Selected problems pertaining to individual treatment and token-economies.

Mr. Bates.

337b. SEMINAR ON PROBLEMS IN CHILD AND DEVELOPMENTAL PSYCHOLOGY.

To be announced.

345a. DEVELOPMENTAL PSYCHOLOGY AND PSYCHOPATHOLOGY.

Theoretical, clinical and experimental aspects of psychopathology from a developmental point of view.

Messrs. Bibace, Kaplan, Wapner.

346b. DEVELOPMENTAL PSYCHOLOGY AND PSYCHOANALYSIS.

Not offered, 1967-68.

Offered in alternate years.

Mr. Bibace.

347b. DEVELOPMENTAL APPROACHES TO COGNITIVE ASSESSMENT AND BEHAVIOR CHANGE.

Not offered, 1967-68.

Clinical applications of Werner's comparative-developmental approach to cognitive assessment and behavior change. The contributions of Kephart, Rabinovitch, Rey, Zazzo, and others will also be covered. A clinical or experimental study will be required.

Mr. Bibace.

348. BEHAVIORAL VARIATIONS IN SOCIAL SETTINGS AND PROBLEMS OF ADJUSTMENT.

The development and maintenance of behavior patterns in social institutions and explorations of the ways individual-institution non-congruence may be resolved through modification of institution, child, or both. Practicum experience in the course includes work in community settings (e.g., schools, recreation centers, hospitals).

Mr. Laird.

349. APPRENTICESHIP IN REHABILITATION: ADVANCED, I.

Miss Dembo.

350. APPRENTICESHIP IN REHABILITATION: ADVANCED, II.

Miss Dembo.

351. CLINICAL METHODS, III.

Integration of various methods in assessment of personality and behavior.

Mr. Rothstein and Clinical Staff.

352. CLINICAL METHODS, IV.

Application of theoretical principles to psychotherapy.

Miss Dewese, Mr. Sills and Clinical Staff.

353b. ADVANCED PRACTICE AND THEORY IN CLINICAL CHILD PSYCHOLOGY.

Demonstration and theoretical consideration of recently developed personality situational and cognitive tests useful in assessing personality functioning, coping styles and cognitive styles in children. Select infants and children from clinic and normal populations serve as the subject matter. Emphasis is given to clinical technique and conceptual integration of data from the vantage point of psychoanalytic ego psychology. Limited to students who have had internships or by permission of instructor. Mr. Santostefano.

356a. PSYCHOPATHOLOGY OF CHILDHOOD.

Not offered, 1967-68.

Offered in alternate years.

Mr. Benda.

357. PSYCHOLOGY OF SYMBOLIC BEHAVIOR.

Not offered, 1967-68.

Basic aspects of symbolic behavior: theory, experimental research, ontogenesis, psychopathology of symbol formation. Mr. Kaplan.

364b. SELECTED PROBLEMS IN PSYCHOPHARMACOLOGY.

Not offered, 1967-68.

380. RESEARCH IN PSYCHOLOGY.

Mr. Krus and Visiting Staff.

Direction of individual students in their research.

Staff.

381. READINGS IN PSYCHOLOGY.

Critical analysis of literature in areas related to individual research.

Staff.

385. PARTICIPATION IN PSYCHOLOGICAL CLINIC, I.

Introduction and individual intelligence testing.

Mr. Bibace and Clinical Staff.

386. PARTICIPATION IN PSYCHOLOGICAL CLINIC, II.

Personality evaluation by tests.

Mr. Bibace and Clinical Staff.

387. PARTICIPATION IN PSYCHOLOGICAL CLINIC, III.

Psychotherapy and consulting.

Mr. Bibace and Clinical Staff.

388. PARTICIPATION IN PSYCHOLOGICAL CLINIC, IV.

Personality evaluation by interview; psychotherapy.

Mr. Bibace and Clinical Staff.

389. INTERNSHIP.

Staff.

DEPARTMENTAL COLLOQUIUM

Visiting Lecturers.

WORKSHOPS

Conducted annually in such areas as comparative-animal psychology, scaling theory, factor analysis, rehabilitation, cultural anthropology, ethnolinguistics, pathology of language.

Visiting Lecturers.

Romance Languages

DEPARTMENT FACULTY

J. Richard Reid, Ph.D., *Professor of Romance Languages, Department Chairman*

Raymond E. Barbera, Ph.D., *Associate Professor of Romance Languages*

J. Fannin King, M.A., *Associate Professor of Romance Languages*

Theodore Nicol, Ph.D., *Associate Professor of Romance Languages*

William S. Shiver, Ph.D., *Assistant Professor of Romance Languages*

Nancy M. Baum, M.A.Ed., *Instructor in Romance Languages*

Janet M. Wesson, M.A.Ed., *Instructor in Romance Languages*

UNDERGRADUATE PROGRAM

The department offers courses in the languages and literatures of France, Spain and Spanish America. These courses fall into two groups: lower level (French and Spanish 11 and 12), and upper level (all other courses). French 113 (French civilization) constitutes a separate category.

In the lower level the primary aim is the mastery of the skills of communication in a language, with a view to its effective use for a variety of possible ends. These skills include reading, writing, speaking and understanding as well as what may be called basic literacy in the language.

In the upper level, the primary aim is an acquaintance in depth with a foreign civilization, principally through a study of its literature but with attention also to other aspects of its culture and to the further perfection of linguistic competence. The courses in literature are complemented by others in civilization and in advanced composition, conversation and phonetics.

A major in Romance languages must comprise:

1. Twenty-four semester hours to be chosen from French 137, 141, 147a, 151a, 152a, 153b, 154b and 250; Spanish 137, 141, 142a, 143a, 144b, 145b and 250; Romance Languages 248b.
2. French 113 or the equivalent.
3. History 10, or the equivalent, normally to be completed by the end of the sophomore year.
4. At least 6 semester hours, to be approved by the department, in non-Romance literature.

The Romance language major program may be in either French or Spanish exclusively, or include both languages in any proportion to suit the needs and desires of the individual. Major students are urged, however, to acquire a basic competence in both languages even though specializing in only one.

In addition, at least 36 semester hours of a major's program must be selected from other than Group C and Group D courses (See Page 42 concerning "Groups").

Students intending to major in Romance languages should consult the department chairman. An honors program in Romance languages is available to qualified upperclassmen.

LANGUAGE LABORATORY

A modern electronic language laboratory is available for class instruction, independent study and self-appraisal. Use of the laboratory is required of students in the lower level

and "137" courses in French and Spanish, and available to others. See the section on "Tuition and Other Charges" for the laboratory fee.

DEPARTMENTAL INTERNSHIP PROGRAM

The department cooperates with the Department of Education in a graduate program of preparation of teachers of Romance languages, leading to the degree of Master of Arts in Education. Participants carry appointment as Teaching Assistant Scholars and as Departmental Interns in Romance Languages. Normally requiring two years, the program consists of half-time study in education and Romance languages and literatures, and half-time devoted to supervised teaching and other assistance to the Department of Romance Languages.

COURSES IN FRENCH

F11. ELEMENTARY.

For beginners or others not yet qualified to enter the intermediate course. Grounding in all four language skills (hearing, speaking, reading, writing) as preparation for subsequent courses conducted in the language. Meets each week: twice in General Session, twice in small Drill Sessions, three half-hour periods of individual work in the language laboratory. Laboratory fee. Open to freshmen. Indivisible course. *Three semester hours each semester.* Staff.

F12. INTERMEDIATE.

Review of the elements and further development of communication skills aimed at a basic literacy. Conducted in French. Meets each week: twice in General Session, twice in small Drill Sessions, three half-hour periods of individual work in the laboratory. Laboratory fee. Prerequisite: French 11 or equivalent skill in the language, to be determined by a placement test. Open to freshmen. *Three semester hours each semester.* Staff.

F13. INTRODUCTION TO FRENCH CIVILIZATION.

A selective survey of the history, art, literature and music of France, from the Middle Ages to modern times. An elementary knowledge of French is desirable but not required. Admission subject to consent of the instructor. Offered in alternate years. *Three semester hours each semester.* Mr. Nicol.

F131. READINGS IN FRENCH LITERATURE.

Third-year level. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of reading in French. The emphasis in the second semester is on an understanding of novels and plays selected for their literary excellence and broad appeal. Conducted in French. Prerequisite: French 12 or equivalent skill in the language, to be determined by a placement test. Open to freshmen. *Three semester hours each semester.* Staff.

F132a. FRENCH EXISTENTIALIST AUTHORS OF THE TWENTIETH CENTURY.

Third-year level. Conducted in French. Prerequisite: First semester of French 131, or grade of B- or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. Open to freshmen. *Three semester hours.* Mr. Nicol.

F132b. FRENCH COMEDY.

Third-year level. Study of the various types of French comedy and an analysis of the nature of the comic spirit. Examples considered may range from the medieval farce to the present-day anti-comedy. Conducted in French. Prerequisite: First semester of French

131, or grade of B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. Open to freshmen. *Three semester hours.* Mr. Nicol.

134a. LITERARY PORTRAYALS OF THE OUTSIDER AND THE REBEL.

Third-year level. Studies in the problem of conscience and human values in the life of the outsider and the rebel as portrayed in selected works of recent French writers. Conducted in French. Prerequisite: First semester of French 131 or B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of the instructor. *Three semester hours.* Mr. Shiver.

F134b. IDEAS OF UTOPIA IN FRENCH LITERATURE.

Third-year level. Selected readings and discussion. A study of both theoretical and imaginative writing concerning the question of the perfectibility of human life. Intended especially for students majoring in fields other than language and literature. Conducted in French. Prerequisite: First semester of French 131, or grade of B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. *Three semester hours.* Mr. Shiver.

137. ORAL AND WRITTEN FRENCH.

The aim of this third-year course throughout is the perfecting of skills in communication both oral and written. In the first semester, particular attention is given to the sounds of French and to its rhythm and melodic patterns. In the second semester, increasing attention is given to grammatical patterns and written French and to fluency in the spoken language. Conducted in French. Prerequisite: Grade of B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Two regular class periods, one two-hour session and three half-hour periods in the laboratory per week. Laboratory fee. Admission subject to consent of the instructor. *Three semester hours each semester.* Mr. King.

141. GENERAL VIEW OF FRENCH LITERATURE.

An interpretation of the main currents of French literature. Each period is studied by concentrating attention on a limited number of works and authors best bringing to focus the characteristics of the period. Conducted in French. Prerequisite: Grade of B— or higher in a third-year course. *Three semester hours each semester.* Mr. King.

147b. ADVANCED COMPOSITION AND STYLISTICS.

Not offered, 1967-68.

Introduction to the problems of stylistics with a study of selected grammatical topics. Conducted in French. Prerequisite: Grade of B— or higher in French 137, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Nicol.

151a. THE MIDDLE AGES AND THE RENAISSANCE.†

Emphasis is upon developing an understanding of the philosophical, religious and social attitudes of the Middle Ages and the Renaissance, with due attention to the facts of literary history. Conducted in French. Prerequisite: Grade of B— or higher in French 141, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. King.

152a. CLASSICISM.†

Not offered, 1967-68.

A study of outstanding literary works, drawn principally but not exclusively from the

†For French 151a, 152a, 153b and 154b a certain historical and analytical perspective such as is provided by French 141 is presupposed. These courses are planned so that they need not be taken in chronological order but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.

age of Louis XIV, to illustrate the esthetic and intellectual nature of the classical point of view as it persists in the French thought of various periods. Conducted in French. Prerequisite: Grade of B— or higher in French 141, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Nicol.

153b. ROMANTICISM AND REALISM.†

Not offered, 1967-68.

A study of outstanding literary works, drawn principally but not exclusively from the late 18th and 19th centuries, to illustrate the esthetic and intellectual climates and the literary techniques generally described as romantic or realistic. Conducted in French. Prerequisite: Grade of B— or higher in French 141, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Nicol.

154b. THE MODERN PERIOD.†

A study of a few outstanding dramatists, novelists and poets to illustrate the highly varied literary attitudes characteristic of 20th century French literature. Conducted in French. Prerequisite: Grade of B— or higher in French 141, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Nicol.

ROMANCE LANGUAGES 248b. COMPARATIVE FRENCH AND SPANISH PHONOLOGY.

Not offered, 1967-68.

The elements of general phonetics and phonemic theory, followed by a detailed study of the sound-systems of French and Spanish, and practical application to pronunciation practice. Open to juniors, seniors and graduate students, with the consent of the instructor. Offered in alternate years. *Three semester hours.* Mr. Reid.

FRENCH 250. SPECIAL TOPICS IN FRENCH.

Staff.

ROMANCE LANGUAGES 270. (EDUCATION 270) THE TEACHING OF ROMANCE LANGUAGES.

For complete description, see Education 270. *Three semester hours.* Mr. Reid and Staff.

ROMANCE LANGUAGES 271. (EDUCATION 271) THE TEACHING OF ROMANCE LANGUAGES.

Advanced. (See Education 271). *Three semester hours each semester.*

Mr. Reid and Staff.

COURSES IN SPANISH

F11. ELEMENTARY.

For beginners or others not yet qualified to enter the intermediate course. Grounding in all four language skills (hearing, speaking, reading, writing) as preparation for subsequent courses conducted in the language. Meets each week: twice in General Session, twice in small Drill Sessions, three half-hour periods of individual work in the language laboratory. Laboratory fee. Open to freshmen. Indivisible course. *Three semester hours each semester.* Staff.

F12. INTERMEDIATE.

Review of the elements and further development of communication skills aimed at a basic literacy. Conducted in Spanish. Meets each week: twice in General Session, twice in small Drill Sessions, and three half-hour periods of individual work in the laboratory. Laboratory fee. Prerequisite: Spanish 11 or equivalent skill in the language, to be determined by a placement test. Open to freshmen. *Three semester hours each semester.*

Staff.

†For French 151a, 152a, 153b and 154b a certain historical and analytical perspective such as is provided by French 141 is presupposed. These courses are planned so that they need not be taken in chronological order but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.

F131. READINGS IN SPANISH AND SPANISH-AMERICAN LITERATURE.

Third-year level. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of reading in Spanish; in the second semester, on the understanding of works of high literary quality and broad appeal. Readings from Spain and one American nation, selected with a view to developing insight into the respective cultures. Conducted in Spanish. Prerequisite: Spanish 12 or the equivalent skill in the language, to be determined by a placement test. Open to freshmen. *Three semester hours each semester.* Mr. Reid.

F131.1b. MEXICAN THEMES.

Independent study of literature dealing with some theme of Mexican culture, of the student's choosing. Written report. Limited to students who are currently enrolled in Spanish 131. *One semester hour.* Mr. Reid.

137. ORAL AND WRITTEN SPANISH.

Not offered, 1967-68.

Third-year level. A rapid intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted in Spanish. Admission subject to consent of instructor. Prerequisite: Grade of B— or higher in Spanish 12, or equivalent skill in the language, to be determined by a placement test. Offered in alternate years. Two regular class periods, one two-hour session, and one to two hours in the laboratory per week. Laboratory fee. *Three semester hours each semester.* Mr. Barbera.

141. THE LITERATURE OF SPAIN.

A general view of Spanish literature with emphasis on the origins and development of the novel and drama, culminating in the masterworks of the nineteenth century. Attention is given to political and cultural background. Conducted in Spanish. Prerequisite: Grade of B— or higher in Spanish 131 or 137, or the equivalent. Offered in alternate years. *Three semester hours each semester.* Mr. Barbera.

142a. EARLY SPANISH LITERATURE FROM THE *Poema de Mio Cid* TO THE *Celestina*.

Not offered, 1967-68.

This course will emphasize the nature of epic poetry, the first manifestation of "realism" in the literature of the Middle Ages, and will culminate in the hybrid masterpiece, the *Celestina*, a combination of novel and drama, unique in the history of European literature. Conducted in Spanish. Prerequisite: Grade of B— or higher in Spanish 131 or 137, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Barbera.

143a. CERVANTES.

This course will concentrate upon *Don Quixote* with excursions into other writings of Cervantes illustrating the changes in his literary development. Cervantes' debt to previous literary works will be studied. Conducted in Spanish. Prerequisite: Grade of B— or higher in Spanish 131 or 137, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Barbera.

144b. THE DRAMA OF THE SIGLO DE ORO.

Not offered, 1967-68.

Besides studying the major figures such as Lope de Vega, Tirso de Molina, Alarcón and Calderón de la Barca, there will be some study of the origins of the drama in Spain. Conducted in Spanish. Prerequisite: Grade of B— or higher in Spanish 131 or 137, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Barbera.

145b. THE MODERN NOVEL.

A number of 19th century novels will be read. The 20th century will be represented by such outstanding novelists as Galdós (who bridges the 19th and 20th centuries), Unamuno, Valle-Inclán and Baroja. Conducted in Spanish. Prerequisite: Grade of B— or higher in Spanish 131 or 137, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Barbera.

ROMANCE LANGUAGES 248b. COMPARATIVE FRENCH AND SPANISH PHONOLOGY.

Not offered, 1967-68.

For complete description, see Romance Languages 248b under Courses in French.

Mr. Reid.
Staff.

SPANISH 250. SPECIAL TOPICS IN SPANISH.

ROMANCE LANGUAGES 270. (EDUCATION 270) THE TEACHING OF ROMANCE LANGUAGES.

For complete description, see Education 270.

Mr. Reid and Staff.

ROMANCE LANGUAGES 271. (EDUCATION 271) THE TEACHING OF ROMANCE LANGUAGES.

Advanced. (See Education 271).

Mr. Reid and Staff.

Russian

DEPARTMENT FACULTY

Larisa Quincy-Sorokin, M.A., *Assistant Professor of Russian*

UNDERGRADUATE PROGRAM

Courses are offered in Russian language and literature to provide a competent reading and speaking knowledge of the language essential for carrying on advanced study in many fields, to fulfill the language requirement for the degree of Bachelor of Arts and to provide an introduction to Russian civilization.

COURSES

F11. INTRODUCTORY RUSSIAN.

An introduction to the written and spoken language. Three class periods and three laboratory sessions per week. Laboratory fee. Open to freshmen. Indivisible course. *Four semester hours each semester.*

Mrs. Sorokin.

F12. INTERMEDIATE RUSSIAN.

Advanced Russian grammar. Continued emphasis upon reading and conversation. Three periods and three class laboratory sessions per week. Laboratory fee. Open to qualified freshmen. *Three semester hours each semester.*

Mrs. Sorokin.

13. ADVANCED RUSSIAN.

Intensive reading of contemporary and literary sources. Advanced composition and conversation. *Three semester hours each semester.*

Mrs. Sorokin.

130. LITERARY ANALYSIS OF SELECTED WORKS OF RUSSIAN LITERATURE.

Not offered, 1967-68.

In Russian. Prerequisite: Russian 13 or equivalent with permission of the instructor. *Three semester hours each semester.*

Mrs. Sorokin.

179. SURVEY OF RUSSIAN LITERATURE.

Not offered, 1967-68.

Course provides a complete survey of Russian literature from its inception in the 11th century to the Revolution of 1917. Major trends in the development of the medieval literary tradition will be illustrated, leading into the "Golden Age" of Russian letters in

the 19th century. Concentrated attention will be given to the evolution of the realistic tradition in Russia, culminating in the works of Tolstoy, Dostoyevsky, Chekhov and Gorky. Twentieth century literary movements of Symbolism, Acmeism and Futurism will be discussed leading into the material treated in the course on Soviet Literature 180. Given in English. *Three semester hours each semester.* Mrs. Sorokin.

180. SOVIET LITERATURE. Not offered, 1967-68.
In translation. Poems, plays, and novels of selected Soviet authors considered as works of literary art and as illustrations of the social, economic, and political conditions of the period. *Three semester hours each semester.* Mrs. Sorokin.

181b. DIRECTED READINGS IN RUSSIAN LITERATURE. Not offered, 1967-68.
Conducted in English. Study of selected masterpieces of Russian literature of the 19th century. Prerequisite: Russian 179 or consent of the instructor. *Three semester hours.* Mrs. Sorokin.

191. SEMINAR IN SOVIET LITERATURE. Not offered, 1967-68.
Major works which contribute to an understanding of Soviet literary, cultural and intellectual trends will be read and discussed. Prerequisite: consent of the instructor. *Three semester hours each semester.* Mrs. Sorokin.

Sociology DEPARTMENT FACULTY

Philip G. Olson, Ph.D., *Associate Professor of Sociology, Department Chairman*

Frederick W. Killian, LL.B., *Associate Professor of Sociology*

Willard D. Callender, Jr., Ph.D., *Assistant Professor of Sociology*

Charles W. Estus, Ph.D., *Assistant Professor of Sociology*

Arthur J. Vidich, Ph.D., *Visiting Professor of Sociology*

Rogers P. Johnson, M.A., *Visiting Lecturer of Sociology*

UNDERGRADUATE PROGRAM

An undergraduate major in sociology is designed to provide the student with an understanding of the intellectual tradition which has focused on description and explanation of human society, its structure, organization, and process. Emphasis is on both theoretical aspects of society in general and specifically the nature of American society. Requirements for a major in sociology consist of 24 semester hours in sociology, of which six must be from 100 level courses and six from an advanced theory course (Sociology 290 or its equivalent). In addition, 18 semester hours must be in related fields, which include all courses in economics, government, history, international relations, linguistics, philosophy, psychology; educational psychology; educational sociology; and cultural geography. All students are encouraged to take 100 level courses during their freshman and sophomore years, since enrollment in each course is limited to 50 students and preference is given to freshmen and sophomores. Six semester hours of 100 level courses is the prerequisite for all 200 level courses.

In addition, at least 36 semester hours of a major's program must be selected from other than the related fields listed above.

An honors program of independent study and research is available to qualified upper-classmen. Ordinarily a candidate will begin honors work in the second semester of the junior year by enrolling in Sociology 28.

A program of field research and advanced study for undergraduates is available to qualified seniors through a National Science Foundation grant. Qualified seniors spend the year in graduate level courses, graduate colloquia, and take Sociology 290, 21, and either 255, 26, 292a, or 293a, and spend the following summer in a full-time research project.

GRADUATE PROGRAM

Graduate study leading to the Master of Arts degree is offered. The program emphasizes theory and research methods and the following substantive areas: Law and society, community and urban society. Field research as part of the thesis preparation is normally done through the recently created Center for Community Studies, a research center drawing on the professional talents of social scientists in the Worcester area colleges and universities and oriented toward urban research.

All graduate students are required to have teaching experience as part of their M.A. program. This may be accomplished by assisting in one or more of the 100 level courses.

COURSES

F12a. SOCIAL ANTHROPOLOGY.

An analysis of primitive society with emphasis on social structure, including religion, kinship and economics. The relation between culture and personality and the processes of social change in the primitive world are explored. Open to freshmen. *Three semester hours.* Mr. Blaut.

F13b. INDIVIDUAL AND SOCIAL STRUCTURE.

An examination of the social contexts out of which personality types emerge; the development of the social mind and self; theories of interpersonal behavior and the presentation of self; the relation between individual behavior and social structures. An analysis of the role of history, society, and psychological factors in the development of personal identity. *Three semester hours.* Mr. Estus.

F14a. SOCIAL ORGANIZATION.

Social structure of major social systems: government, business, education, religion. Also selected special systems: science, welfare, leisure. Emphasis on roles of bureaucracy, informal groups, social movements and publics in these systems. *Three semester hours.* Mr. Callender.

F15. RELIGION AND SOCIETY.

First semester: An analysis of the relationship between religious institutions and society in both its functional and dysfunctional aspects. Special attention will be given to the various ways in which this relationship has been understood by the sociologist. Second semester: An examination of a social psychological model of the self-system for application to phenomena traditionally characterized as religious. Special attention will be given to the desirability of introducing a concept of the religious or its equivalent into current social-psychological theories of the self. *Three semester hours each semester.*

Mr. Estus.

F17a. AMERICAN MINORITY GROUPS.

Analysis of the major racial, ethnic and religious minorities in the U.S.A. Their structures, conflicts and changing relations with the dominant American culture. Social effects of alternative policies and strategies in contemporary minority group relations. *Three semester hours.* Mr. Johnson.

F18b. DEVIANT BEHAVIOR.

The origins and sources of socially disapproved behavior in human groups, particularly societies. Study of the major types of deviant behavior in the United States and the processes by which they are defined, generated, and controlled. *Three semester hours.*

Mr. Callender.

21. SOCIOLOGICAL ANALYSIS.

First semester: The analysis of the philosophical and logical premises underlying the collection and interpretation of empirical data and the extension of these to sociological contexts. Special attention will be given to the function and development of heuristic models and their operationalization for use in sociological research. The student will begin the development of a research design. Second semester: the investigation of data collection techniques and quantitative methods of analysis. Special attention will be given to the relationship between heuristic models and data collection and analysis techniques. The student will complete and execute the research design begun in the first semester. Indivisible. Students who take this course are encouraged to take concurrently one 2-level substantive course from among the following: Sociology 255, 26, 292a, 293. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours each semester.*

Mr. Estus.

220b. POLITICAL SOCIOLOGY.

A systematic analysis of sociological contributions to theory and research in politics. Both traditional and contemporary works in theory will be examined. Research in voting behavior, community power, and social movements will be emphasized. *Three semester hours.*

Mr. Johnson.

24b. THE COMMUNITY.

Not offered, 1967-68.

An analysis of community studies as the basis for understanding society, with particular reference to American society. The rise of central institutions and the transformation of community in twentieth century America: The links between community social structure and the total society. The historical decline of community and the emergence of pseudo-communities. The course will focus on a comparative analysis of the major American community studies. *Three semester hours.*

Mr. Olson.

25. LAW AND SOCIETY.

First semester: Law, the social order, power and control. The basis of the legal order and legal institutions. Second semester: The problem situation, change and current legal problems. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours each semester.*

Mr. Killian.

255. SOCIOLOGY AND LAW.

A study of the application of social theory and of sociological theory to the analysis of law and legal institutions. The background of "sociological jurisprudence" and of "legal realism" in the nineteenth century and the early twentieth century. Emphasis on the work of Ehrlich, Max Weber, Durkheim, Parsons, Evan, Pound, Sorokin, Maine, Pollock and Maitland, Hoebel, Llewellyn, Riesman, Jerome Frank, John Chipman Gray, Jerome Hall, and other Europeans and Americans. The second semester will include current trends in criminological theory. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours each semester.*

Mr. Killian.

26. URBAN CULTURE AND SOCIAL STRUCTURE.

First semester: An analysis of the major features of modern urban centers, with particu-

lar reference to American cities. Varieties of urban life styles, historical trends, and major subcommunities will be explored. The central structural features of urbanism will be detailed. Second semester: Specific structural analyses of urban life will be made, including ecological, social area, social and political participation, and mass behavior. Emphasis will be put on social change in urban centers and the political and social processes that are brought to bear in efforts to direct such changes. *Three semester hours each semester.* Mr. Olson.

270b. REFERENCE GROUP THEORY.

The conditions under which persons in interaction perceive, think, feel, and act in terms of the perspective of one group or set of groups rather than upon the perspectives of other objectively available groups. Attention will be given to the questions of when non-membership rather than membership groups are used to guide behavior and to the formation of negative reference groups. Differences in social behavior patterns (e.g. voting patterns, participation in voluntary groups) will be explored using the concepts of the course. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.* Mr. Callender.

28. HONORS.

Three semester hours each semester.

Staff.

290a. CLASSICAL SOCIOLOGICAL THEORY.

Not offered, 1967-68.

An analysis of classical European theory, including Marx, Weber, Freud, Durkheim, Simmel and Mannheim, emphasizing the historical, dramatistic, systematic elements in their work. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.* Mr. Olson.

290b. CONTEMPORARY SOCIOLOGICAL THEORY.

Not offered, 1967-68.

An examination of the main theoretical and critical perspectives employed by American sociologists in their description and analysis of social life. The work of Parsons, Mills, Merton, Riesman, Goodman and others is evaluated in the light of the European tradition of social analysis and what it offers for an understanding of American society. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Olson.

291a. SEMINAR: SUICIDE.

Not offered, 1967-68.

A detailed examination of the major sociological literature dealing with suicide. Emphasis will be on the classical studies and theoretical formulations and recent studies. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.* Mr. Callender.

292a. INTERPERSONAL THEORY.

An examination of the social psychology of George Herbert Mead and later representatives of interpersonal theory leading to the development of a conceptual system for the analysis of interpersonal processes of inter-action. Through student papers, the seminar will examine the application of interpersonal theories in social psychology to various areas of sociological analysis involving the problem of the relationship between self-systems and social-systems. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.* Mr. Estus.

293a. DEATH AND SOCIAL CONTROL.

An examination of how assumptions about life and death shape the structure of personal and group action in selected societies. The course will focus on the relationship of death assumptions to socially structured motivational concepts (e.g. salvation, career, success, nirvana). Attention will also be given to general cognitive structures such as space and time and to the uses of death in everyday activity. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.* Mr. Callender.

295. AMERICAN SOCIAL THEORY AND SOCIAL STRUCTURE.

An examination of the major theoretical, empirical and critical perspectives employed by American social analysts in their description and analysis of American Society. The work of Veblen, Schumpeter, Mills, Riesman, Moore, Parsons, Merton, Goodman, Bensman, Baltzell, Bell, Galbraith, and others is evaluated in the light of newly emerging institutions and structures in the United States. Major substantive emphasis will be placed on politics, class and bureaucracy. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours each semester.* Mr. Vidich.

36. READINGS IN SOCIAL ANTHROPOLOGY.

One to three semester hours.

Staff.

37. READINGS IN SOCIOLOGY.

One to three semester hours.

Staff.

38. RESEARCH.

One to three semester hours.

Staff.

380. RESEARCH SEMINAR.

Two semester hours.

Staff.

39. THESIS.

Three semester hours.

Staff.

390. THESIS SEMINAR.

Two semester hours.

Staff.



DIRECTORIES

The Faculty

Members of the faculty and officers of instruction for 1967-68 are listed alphabetically with their titles, degrees and years at Clark University. Persons no longer on the faculty but who served during the previous year are included also.

President

FREDERICK HERBERT JACKSON, Ph.D., President; A.B., Brown University, 1941; M.A., University of Pennsylvania, 1948; Ph.D., 1950. (1967-)

Emeriti

HOWARD B. JEFFERSON, Ph.D., LL.D., L.H.D., Litt.D., President, Emeritus; A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956; Litt.D., College of the Holy Cross, 1962; L.H.D., Clark University, 1967. (1946-67)

LEROY ALLSTON AMES, A.M., Professor of English Literature, Emeritus. (1908-44)

SAMUEL J. BRANDENBURG, Ph.D., Professor of Economics and Sociology, Emeritus. (1923-50)

JESSE LUNT BULLOCK, Ph.D., Professor of Chemistry, Emeritus. (1926-59)

GUY HARVEY BURNHAM, A.M., Instructor in Geography and Cartographer, Emeritus. (1922-66)

LYDIA PERRY COLBY, B.S., Registrar, Emeritus. (1932-66)

LORING HOLMES DODD, Ph.D., L.H.D., Professor of English and Art, Emeritus. (1910-49)

ROBERT STANLEY ILLINGWORTH, A.M., Ed.M., Professor of Speech and Drama, Emeritus. (1931-58)

HENRY DONALDSON JORDAN, Ph.D., L.H.D., Professor of English History, Emeritus. (1931-1967)

DWIGHT ERWIN LEE, Ph.D., L.H.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School, Emeritus. (1927-1967)

JAMES ACKLEY MAXWELL, Ph.D., L.H.D., Professor of Economics, Emeritus. (1924-1967)

DAVID POTTER, Ph.D., Professor of Biology, Emeritus. (1924-59)

PERCY MARTIN ROOPE, Ph.D., Professor of Physics, Emeritus. (1921-62)

SAMUEL VAN VALKENBURG, Ph.D., Professor of Geography, Emeritus. (1926-29, 1932-62)

Faculty and Officers of Instruction

VERNON AHMADJIAN, Ph.D., Professor of Botany. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-)

JEREMY ANDERSON, Ph.D., Assistant Professor of Geography. A.B., Yale University, 1956; M.A., University of Washington, 1959; Ph.D., 1964. (1966-)

KARL OSCAR EMANUEL ANDERSON, Ph.D., Professor of English. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-)

ROY STUART ANDERSON, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)

KARL JOHN RICHARD ARNDT, Ph.D., Professor of German. A.M., Washington University, 1928; Ph.D., The Johns Hopkins University, 1933. (1950-)

- ROBERT WILLIAM BAKER, Ph.D., Professor of Psychology, Dean of Students. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)
- GEORGE ANTHONY BALKO, JR., M.B.A., Chairman, Business Administration Program. M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952. (1956-)
- CHARLOTTE L. BALL, M.A., Instructor in Education. A.B., Bates College, 1927; M.A., Clark University, 1960. (1967-)
- FREDERICK EMERSON BAMFORD, Ph.D., Assistant Professor of Economics. B.Mus., Boston University, 1954; B.S. in B.A., 1954; M.B.A., 1955; Ph.D., 1966. (1961-67)
- RAYMOND EDMOND BARBERA, Ph.D., Associate Professor of Romance Languages. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)
- CLAUDE WILLIS BARLOW, Ph.D., Professor of Classics. A.B., Amherst College, 1928; A.M., Indiana University, 1930; Ph.D., Yale University, 1935. (1947-)
- TILTON MARSHALL BARRON, B.L.S., Librarian. A.B., Colorado College, 1937; B.L.S., Columbia University School of Library Service, 1940. (1954-)
- THOMAS C. BARROW, Ph.D., Associate Professor of American History. B.A., Harvard University, 1952; M.A., 1954; Ph.D., 1961. (1967-)
- MELVIN BARTON, Ph.D., Consultant to Psychological Service Center. B.A., City College of New York, 1957; M.A., 1959; Ph.D., Clark University, 1964. (1965-)
- LINDA M. B. BARTOSHUK, Ph.D., Assistant Professor (affiliate) of Physiology. B.A., Carleton College, 1960; Sc.M., Brown University, 1963; Ph.D., 1965. (1967-)
- HENRY D. BATES, Ph.D., Assistant Professor of Psychology. B.A., City College of New York, 1953; M.A., New School for Social Research, New York, 1961; Ph.D., University of Missouri, 1966. (1966-)
- NANCY M. BAUM, M.A., Instructor in Romance Languages. A.B., Clark University, 1963; M.A.Ed., 1965. (1966-)
- JAMES FRANKLIN BEARD, JR., Ph.D., Professor of English. A.B., Columbia College, 1940; A.M., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)
- ROBERT NELSON BECK, Ph.D., Professor of Philosophy. A.B., Clark University, 1947; A.M., Boston University, 1948; Ph.D., 1950. (1948-67)
- TERENCE W. BEED, Ph.D., Visiting Assistant Professor of Geography. A.B., University of Sydney, 1960; Ph.D., University of Sydney, 1964. (1966-67)
- FREDERICK W. BELL, Ph.D., Associate Professor of Economics. B.S., Wayne State University, 1957; M.A., 1961; Ph.D., 1964. (1965-)
- CLEMENS E. BENDA, M.D., Professor (affiliate) of Psychology. M.D., University of Berlin, 1922. (1958-)
- JOSEPH C. BENTLEY, Ph.D., Associate Professor of Educational Psychology. B.A., Brigham Young University, 1959; M.A., University of Minnesota, 1960; Ph.D., 1963. (1963-67)
- ROGER BIBACE, Ph.D., Associate Professor of Clinical Psychology, Director of Psychological Service Center. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)
- GEORGE ATHAN BILLIAS, Ph.D., Professor of American History. A.B., Bates College, 1948; A.M., Columbia University, 1949; Ph.D., 1958. (1962-)
- ARTHUR J. BINDMAN, Ph.D., Lecturer in Psychology. A.B., Harvard University, 1948; M.A., Boston University, 1949; Ph.D., 1955. (1966-)
- JAMES M. BLAUT, Ph.D., Visiting Professor of Geography. B.S., University of Chicago, 1950; M.S., Louisiana State University, 1954; Ph.D., 1958. (1967-)

- CHARLES S. BLINDERMAN, Ph.D., Associate Professor of English. A.B., New York University, 1952; A.M., 1953; Ph.D., University of Indiana, 1957. (1962-)
- DANIEL RAYMOND BORG, Ph.D., Associate Professor of European History. A.B., Gustavus Adolphus College, 1953; A.M., Yale University, 1957; Ph.D., 1963. (1961-)
- MARTYN J. BOWDEN, M.A., Assistant Professor of Geography. B.A., University of London, 1957; M.A., University of Nebraska, 1959. (1964-)
- DAEG S. BRENNER, Ph.D., Assistant Professor of Chemistry. B.S., Rensselaer Polytechnic Institute, 1960; Ph.D., Massachusetts Institute of Technology, 1964. (1967-)
- JOHN J. BRINK, Ph.D., Assistant Professor of Biochemistry. B.Sc., University of Orange Free State, 1955; B.Sc. (Hons.), University of the Witwatersrand, 1956; Ph.D., University of Vermont, 1962. (1966-)
- DONALD MONROE BROVERMAN, Ph.D., Lecturer in Psychology. A.B., Union College, 1952; M.A., Clark University, 1956; Ph.D., 1958. (1964-)
- HERRINGTON J. BRYCE, Ph.D., Assistant Professor of Economics. B.A., Mankato State College, 1960; Ph.D., Syracuse University, 1966. (1967-)
- WESLEY E. BRYERS, Ph.D., Associate Professor of Geology. A.B., Rutgers University, 1956; Ph.D., Columbia University, 1964. (1961-)
- WILLARD D. CALLENDER, JR., Ph.D., Assistant Professor of Sociology. A.B., Bates College, 1958; M.A., University of Connecticut, 1960; Ph.D., 1967. (1966-)
- GEORGE CAMOUGIS, Ph.D., Associate Professor (affiliate) of Physiology. B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-)
- ROBERT FRANCIS CAMPBELL, Ph.D., Professor of American History, Dean of the College. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-57; 1960-)
- BARBARA RICHARDSON CARLSON, A.M., Lecturer in Philosophy. A.B., Clark University, 1964; A.M., Boston University, 1966. (1967-)
- WILLIAM HOYT CARTER, JR., Ph.D., Professor of English. A.B., Middlebury College, 1936; A.M., Harvard University, 1938; Ph.D., 1951. (1949-)
- CONSTANTINE P. CAVARNOS, Ph.D., Visiting Associate Professor of Philosophy. A.B., Harvard College, 1943; A.M., 1947; Ph.D., 1948. (1967-)
- JAMES MADISON COFFEE, Ed.D., Associate Professor of Education. A.B., Duke University, 1949; A.M., Cornell University, 1950; Ed.D., Harvard University, 1957. (1954-)
- KAREN C. COHEN, Ph.D., Lecturer in Education. B.A., Harvard University, 1963; M.S., Johns Hopkins University, 1964; Ph.D., 1965. (1966-)
- MORRIS HAROLD COHEN, Ph.D., Professor of Government. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-)
- SAUL BERNARD COHEN, Ph.D., Professor of Geography, Dean of the Graduate School. A.B., Harvard College, 1947; A.M., Harvard University, 1950; Ph.D., Harvard University, 1955. (1965-)
- THERESA F. COONEY, M.Ed., Lecturer in Education. B.Ed., Rhode Island College of Education, 1946; M.Ed., Boston University, 1953. (1964-)
- GERARD T. CORCORAN, M.A., Registrar. B.A., University of Connecticut, 1957; M.A., 1961. (1966-)
- C. ALTON COULTER, Ph.D., Assistant Professor of Physics. B.A., Howard College, 1956; M.S., University of Alabama, 1959; M.A., Harvard University, 1963; Ph.D., 1964. (1966-)
- SAMUEL PENDLETON COWARDIN III, Ph.D., Associate Professor of Fine Arts. A.B., Harvard University, 1943; A.M., 1948; Ph.D., 1963. (1949-)

- WALTER HOBSON CROCKETT, Ph.D., Professor of Psychology. A.B., University of Kansas, 1947; A.M., 1949; Ph.D., University of Michigan, 1953. (1957-)
- JESSIE CAMPBELL CUNNINGHAM, A.M., Associate Professor of English. Ph.B., University of Chicago, 1948; A.M., 1952. (1957-)
- JOSEPH COLCORD CURTIS, Ph.D., Associate Professor of Zoology. B.A., Cornell University, 1951; Ph.D., Brown University, 1960. (1963-)
- JOHN A. DAVIES, Ph.D., Assistant Professor of Physics. B.S., University of Maryland, 1953; M.S., 1954; Ph.D., 1960. (1963-)
- TAMARA DEMBO, Ph.D., Professor of Psychology. Ph.D., University of Berlin, 1930. (1953-)
- THOMAS JOSEPH DOLPHIN, A.B., Director of The Evening College, Director of the Summer School. A.B., Rutgers University, 1951. (1957-)
- JURIS DRAGUNS, Ph.D., Lecturer in Psychology. B.A., Utica College of Syracuse University, 1954; Ph.D., University of Rochester, 1958. (1963-67)
- JAMES STANHOPE EDWARDS, A.M., Associate Professor of German. A.B., Brown University, 1936; A.M., 1938. (1947-)
- KAREN LOUISE ERICKSON, Ph.D., Assistant Professor of Chemistry. B.S., Siena Heights College, 1960; Ph.D., Purdue University, 1964. (1965-)
- CHARLES W. ESTUS, Ph.D., Assistant Professor of Sociology. A.B., Drury College, 1952; M.A., Duke University, 1960; Ph.D., New York University, 1966. (1966-)
- WESLEY METCALF FULLER, M.Mu., Associate Professor of Music. B.Mu., Oberlin Conservatory of Music, 1953; M.Mu., Boston University, 1958. (1963-)
- NORMAN GESCHWIND, M.D., Professor (affiliate) of Psychology. A.B., Harvard University, 1947; M.D., Harvard Medical School, 1951. (1964-)
- HAROLD GOODGLASS, Ph.D., Professor (affiliate) of Psychology. A.B., College of the City of New York, 1939; A.M., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)
- RICHARD J. GORDON, Ph.D., Assistant Professor of Education. A.B., Dartmouth College, 1962; M.A., Harvard University, 1963; Ph.D., New York University, 1966. (1966-)
- ROCHELEAU ZEPHIRIN GRANGER, JR., A.M. in Ed., Director of Physical Education for Men. A.B., Clark University, 1938; A.M. in Ed., 1939. (1949-)
- KATHRYN H. GRAY, M.S., Assistant Professor of Geology. B.A., College of Wooster, O., 1947; M.S., Northwestern University, 1950. (1967-)
- SANTE GRAZIANI, M.F.A., Associate Professor (affiliate) of Fine Arts. B.F.A., Yale University, 1942; M.F.A., 1948. (1958-)
- GERALD N. GROB, Ph.D., Professor of American History. B.S., College of the City of New York, 1951; A.M., Columbia University, 1952; Ph.D., Northwestern University, 1958. (1957-)
- IAN D. K. HALKERSTON, Ph.D., Associate Professor (affiliate) of Endocrinology. B.Sc., University of Reading, England, 1941; Ph.D., Boston University, 1960. (1967-)
- GEORGE EDWARD HARGEST, M.B.A., Associate Professor of Economics. B.S., Temple University, 1933; M.Ed., 1937; M.B.A., Boston University, 1947. (1942-)
- M. EVELYN HARRIMAN, M.A. in Ed., Lecturer in Education. B.S. in Ed., Boston University, 1948; M.A. in Ed., 1950. (1956-)
- SEYMOUR HAYDEN, Ph.D., Associate Professor of Mathematics. A.B., University of Wisconsin, 1947; A.M., Harvard University, 1948; Ph.D., 1963. (1957-)

- SHERMAN STRONG HAYDEN, Ph.D., Professor of International Relations. A.B., Harvard University, 1930; LL.B., 1933; A.M., Columbia University, 1936; Ph.D., 1942. (1946-)
- EARL E. HAYS, Ph.D., Professor (affiliate) of Physics. A.B., Allegheny College, 1940; Ph.D., Northwestern University, 1949. (1961-)
- JUERGEN HEBERLE, Ph.D., Associate Professor of Physics. A.B., Swarthmore College, 1944; Ph.D., Columbia University, 1955. (1965-67)
- RICHARD P. HIGHT, Ph.D., Assistant Professor (affiliate) of Geology. (1967-)
- SERENA SUE HILSINGER, Ph.D., Assistant Professor of English. A.B., Douglass College, 1959; Ph.D., University of Connecticut, 1964. (1962-)
- M. HAZEL HUGHES, M.Ed., Dean of Women, Director of Physical Education for Women. B.Ed., Clark University, 1944; M.Ed., Boston University, 1949. (1942-)
- ROBERT MOOERS HYDE, A.M., Executive Vice President. A.B., Rutgers University, 1947; A.M., University of Pennsylvania, 1949. (1954-)
- JOHN O. IATRIDES, Ph.D., Lecturer in Russian History. B.A., Ohio Wesleyan University, 1953; M.A. University of Michigan, 1954; Ph.D., Clark University, 1962. (1967-)
- PAUL T. INGLEFIELD, Ph.D., Assistant Professor of Chemistry. B.S., University of Glasgow, 1962; Ph.D., University of British Columbia, 1966. (1967-)
- HARRY L. JACOBS, Ph.D., Associate Professor (affiliate) of Physiology. B.A., University of Delaware, 1950; M.A., 1951; Ph.D., Cornell University, 1955. (1967-)
- ROGERS P. JOHNSON, M.A., Visiting Lecturer in Sociology. B.A., Antioch College, 1947; M.A., Columbia University, 1960. (1964-66) (1967-)
- VERNON JONES, Ph.D., Professor of Educational Psychology. B.A., University of Virginia, 1920; M.A., 1920; M.A., Columbia University, 1924; Ph.D., 1926. (1926-)
- HENRY DONALDSON JORDAN, Ph.D., Professor of English History. A.B., Harvard University, 1918; A.M., 1922; Ph.D., 1925. (1931-67)
- BERNARD KAPLAN, Ph.D., Professor of Psychology. A.B., Brooklyn College, 1948; A.M., Clark University, 1950; Ph.D., 1953. (1955-)
- ROBERT W. KATES, Ph.D., Associate Professor of Geography. A.M., University of Chicago, 1960; Ph.D., 1962. (1962-)
- GERSON KEGELES, Ph.D., Professor of Chemistry. B.S., Yale University, 1937; Ph.D., 1940. (1951-)
- JOHN F. KENNISON, Ph.D., Associate Professor of Mathematics. B.S., Queens College, 1959; A.M., Harvard University, 1960; Ph.D., 1963. (1963-)
- FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology. LL.B., New York University, 1925; A.B., 1934. (1947-)
- ROBERT W. KILMOYER, JR., B.A., Instructor in Mathematics. B.A., Lebanon Valley College, 1961. (1966-)
- JESSE FANNIN KING, A.M., Associate Professor of Romance Languages. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946-)
- EDWARD L. KLAIBER, M.D., Lecturer in Psychology. A.B., Syracuse University, 1952; M.D., State University of New York, 1956. (1964-)
- WERNER P. KOELLA, M.D., Professor (affiliate) of Neurophysiology. M.D., University of Zurich, 1942. (1964-)
- WILLIAM A. KOELSCH, Ph.D., Assistant Professor of History and Geography. Sc.B., Bucknell University, 1955; A.M., Clark University, 1959; Ph.D., University of Chicago, 1966. (1967-)

- BARBARA CASTLE KOHIN, Ph.D., Assistant Professor of Physics. B.S., College of William and Mary, 1953; M.S., University of Maryland, 1956; Ph.D., 1960. (1967-)
- ROGER P. KOHIN, Ph.D., Associate Professor of Physics. B.Sc., Notre Dame University, 1953; Ph.D., University of Maryland, 1961. (1962-)
- ARTHUR M. KROLL, Ph.D., Assistant Professor of Education. A.B., Clark University, 1962; M.A., Harvard University, 1964; Ph.D., 1965. (1967-)
- DONALD MAX KRUS, Ph.D., Associate Professor of Psychology. B.A., Drew University, 1949; A.M., Clark University, 1951; Ph.D., 1957. (1958-)
- DONALD B. LAFFERTY, A.M., Instructor in Music. (1967-)
- JAMES D. LAIRD, Ph.D., Assistant Professor of Psychology. B.A., Middlebury College, 1962; Ph.D., University of Rochester, 1966. (1966-)
- CONNOR LAZAROV, Ph.D., Assistant Professor of Mathematics. B.S., University of Michigan, 1959; A.M., Harvard University, 1960. (1964-)
- DWIGHT ERWIN LEE, Ph.D., Coordinator of Research. (1967-)
- WARREN LITSKY, Ph.D., Professor (affiliate) of Microbiology. A.B., Clark University, 1945; M.S., University of Massachusetts, 1948; Ph.D., Michigan State University, 1951. (1967-)
- GILBERT SCOTT MARKLE, M.A., Assistant Professor of Philosophy. B.S., Rensselaer Polytechnic Institute, 1961; Doctorat d'Université, University of Paris, 1963; Ph.D., Yale University, 1967. (1966-)
- ARTHUR H. MARTIN, M.A., Instructor in English. A.B., Clark University, 1962; M.A., Brandeis University, 1967. (1964-)
- JAMES ACKLEY MAXWELL, Ph.D., Professor of Economics. A.B., Dalhousie University, 1921; A.M., Harvard University, 1923; Ph.D., 1927. (1924-67)
- GEORGE F. MCCLEARY, Ph.D., Assistant Professor of Geography. A.B., Yale, 1959; M.S., University of Wisconsin, 1963; Ph.D., 1966. (1966-)
- MARCUS A. MCCORISON, M.S., Lecturer in American Colonial History. B.A., Ripon College, 1950; M.A., University of Vermont, 1951; M.S., Columbia University, 1954. (1967-)
- FREDERICK EUGENE MELDER, Ph.D., Professor of Economics. B.B.A., University of Washington, 1926; M.A., 1931; Ph.D., University of Wisconsin, 1936. (1937-46; 1950-)
- CONSTANTINE N. MICHALOPOULOS, Ph.D., Assistant Professor of Economics. B.A., Ohio Wesleyan University, 1960; Ph.D., Columbia University, 1965. (1967-)
- DAVID M. MORIARTY, M.D., Professor (affiliate) of Clinical Psychology. M.D., Boston University, 1947. (1960-)
- DAVID GILLMAN MOULTON, Ph.D., Associate Professor of Physiology. B.S., Glasgow University, 1954; Ph.D., University of Birmingham, 1958. (1965-)
- JOHN T. MURPHEY, B.S., Assistant Professor of Fine Arts. B.S. in Ed., Tufts University, 1959. (1965-)
- RAYMOND EDWARD MURPHY, Ph.D., Professor of Economic Geography. B.S., Missouri School of Mines and Metallurgy, 1923; M.S., University of Wisconsin, 1926; Ph.D., 1930. (1946-)
- HOWARD WHITE NICHOLSON, Ph.D., Professor of Economics. B.A., Oberlin College, 1942; A.M., Harvard University, 1948; Ph.D., 1950. (1958-)
- THEODORE NICOL, Ph.D., Associate Professor of Romance Languages. A.B., Clark University, 1926; A.M., Harvard University, 1928; Ph.D., 1933. (1946-)
- NORMAN NOBLE, Ph.D., Assistant Professor of Mathematics. B.A., Reed College, 1963; M.A., University of Rochester, 1966; Ph.D., 1967. (1966-)

- RUDOLPH FINK NUNNEMACHER, Ph.D., Professor of Zoology. B.S., Kenyon College, 1934; A.M., Harvard University, 1935; Ph.D., 1938. (1939-)
- PHILIP GILBERT OLSON, Ph.D., Associate Professor of Sociology. A.B., University of Arizona, 1954; A.M., 1956; Ph.D., Purdue University, 1959. (1961-)
- J. RICHARD PEET, M.A., Assistant Professor of Geography. B.S., University of London, 1961; M.A., University of British Columbia, 1963. (1967-)
- VICTOR H. PENTLARGE, M.D., Consultant to the Psychological Service Center. B.A., Harvard University, 1949; M.D., Harvard Medical School, 1953. (1958-)
- FERNAND G. PERON, Ph.D., Associate Professor (affiliate) of Biochemistry, Director of Steroid Training Program. B.Sc., Sir George Williams University, 1946; M.Sc., McGill University, 1950; Ph.D., 1953. (1967-)
- JAMES F. POWERS, Ph.D., Lecturer in Medieval History. B.A., University of Virginia, 1951, M.A., 1961; Ph.D., 1966. (1967-)
- LARISA QUINCY-SOROKIN, M.A., Assistant Professor of Russian. B.A., University of California, Los Angeles, 1961; M.A., 1962. (1964-)
- RICHARD RABLEN, Ph.D., Associate Professor (affiliate) of Psychology. B.A., Depauw University, 1952; M.A., University of Wisconsin, 1955; Ph.D., 1958. (1966-)
- RELLY RAFFMAN, A.M., Professor of Music. A.B., Dartmouth College, 1943; A.M., Columbia University, 1949. (1954-)
- KNUD RASMUSSEN, Ph.D., Associate Professor of Government. B.A., Copenhagen University, 1953; M.A., Cornell University, 1960; Ph.D., Rutgers University, 1964. (1966-)
- J. RICHARD REID, Ph.D., Professor of Romance Languages. A.B., Swarthmore College, 1935; A.M., Harvard University, 1936; Ph.D., 1943. (1944-)
- OSCAR RESNICK, Ph.D., Lecturer in Psychology. A.B., Clark University, 1944; M.A., Harvard University, 1945; Ph.D., Boston University, 1955. (1966-)
- JOHN THEODORE REYNOLDS, Ph.D., Associate Professor of Microbiology. B.S., Boston College, 1951; M.S., University of Massachusetts, 1954; Ph.D., 1962. (1956-)
- JOEL H. ROACHE, M.A., Visiting Lecturer in English. B.A., University of Louisville, 1962; M.A., University of Pennsylvania, 1963. (1967-)
- BERNARD P. ROSENBLATT, Ph.D., Psychology Consultant to the Psychological Service Center. A.B., University of New Hampshire, 1947; Ph.D., Clark University, 1956. (1956-)
- HARRIS ROSENKRANTZ, Ph.D., Professor (affiliate) of Biochemistry. A.B., Brooklyn College, 1943; M.S., New York University, 1946; M.S., Cornell Medical College, 1948; Ph.D., Tufts Medical School, 1952. (1959-)
- RICHARD I. ROTH, Ph.D., Supervisor of Clinical Psychology. B.A., Queens College, 1959; Ph.D., Adelphi University, 1964. (1966-67).
- RALPH ROTHSTEIN, Ph.D., Associate Professor (affiliate) of Psychology. A.B., University of Michigan, 1952; M.A., University of Connecticut, 1953; Ph.D., University of Massachusetts, 1959. (1965-)
- ZALMAN RUBINSTEIN, Ph.D., Associate Professor of Mathematics, M.S., University of Jerusalem, 1958; Ph.D., University of Maryland, 1962. (1964-)
- SEBASTIANO SANTOSTEFANO, Ph.D., Associate Professor of Psychology. B.S., University of Connecticut, 1953; M.S., Pennsylvania State University, 1954; Ph.D., 1957. (1964-)
- ALBERT J. SARGENT, M.A., Lecturer in Economics. B.S., Northeastern University, 1960; M.B.A., Clark University, 1962; M.A., 1967. (1965-)
- DAVID W. SAVAGE, Ph.D., Assistant Professor of English History. A.B., Denison University, 1959; M.A., Princeton University, 1961; Ph.D., 1963. (1967-)

- DONALD T. SAVAGE, Ph.D., Assistant Professor of Economics. B.B.A., University of Massachusetts, 1960; M.S., University of Wisconsin, 1961; Ph.D., 1967. (1964-)
- MARCIA A. SAVAGE, Ed.D., Lecturer in Education, Assistant Dean of Women. A.B., Clark University, 1961; M.A., 1962; Ed.D., 1966. (1964-)
- WALTER SCHATZBERG, Ph.D., Assistant Professor of German. B.A., St. John's College, Maryland, 1954; M.A., Johns Hopkins University, 1957; Ph.D., 1966. (1966-)
- NEIL ROLF SCHROEDER, Ph.D., Associate Professor of English. A.B., Brown University, 1952; Ph.D., Yale University, 1962. (1960-)
- ARTHUR JOSEPH SERRA, B.S., Assistant in Physical Education. B.S., Springfield College, 1956. (1960-67)
- DAVID D. SHARON, Ph.D., Visiting Associate Professor of Geography. M.S., Hebrew University of Jerusalem, 1960; Ph.D., 1965.
- CLIFFORD K. SHIPTON, Ph.D., Professor (affiliate) of American History. B.S., Harvard University, 1926; A.M., 1927; Ph.D., 1933. (1961-67)
- WILLIAM S. SHIVER, Ph.D., Assistant Professor of Romance Languages. A.B., Xavier University of Louisiana, 1942; M.A., Columbia University, 1953; Ph.D., 1965. (1966-)
- MALCOLM SILLS, M.D., Psychiatry Consultant to the Psychological Service Center. B.S., Middlesex University, 1942; M.D., Middlesex Medical School, 1945. (1961-)
- JOSEPH A. SINNOTT, M.S., Lecturer in Geology. B.S., Worcester State College, 1955; M.S., Boston University, 1957. (1966-)
- RODMAN ELDREDGE SNEAD, Ph.D., Associate Professor of Geography. B.A., University of Virginia, 1953; A.M., Syracuse University, 1955; Ph.D., Louisiana State University, 1963. (1961-)
- ROBERT JOHN STAIRS, B.S., Assistant in Physical Education. B.S., University of Rhode Island, 1956. (1959-)
- STEWART A. STEHLIN, Ph.D., Assistant Professor of European History. B.A., Rutgers University, 1958; M.A., Yale University, 1959; Ph.D., 1965. (1966-)
- DONALD G. STEIN, Ph.D., Assistant Professor of Psychology. B.A., Michigan State University, 1960; B.S., Michigan State University, 1962; Ph.D., University of Oregon, 1965. (1966-)
- DAVID A. STEVENS, Ph.D., Assistant Professor of Psychology. A.B., University of California, 1954; M.A., University of Oregon, 1963; Ph.D., 1965. (1965-)
- JOHN SUNAPEE STUBBE, Ph.D., Associate Professor of Mathematics. B.S., University of New Hampshire, 1941; M.S., Brown University, 1942; Ph.D., University of Cincinnati, 1945. (1949-)
- THOMAS TAMOTSU SUGIHARA, Ph.D., Professor of Chemistry. A.B., Kalamazoo College, 1945; S.M., University of Chicago, 1951; Ph.D., 1952. (1953-67)
- SANG C. SUH, Ph.D., Assistant Professor of Economics. B.A., Clark University, 1958; M.A., 1959; Ph.D., Harvard University, 1967. (1964-)
- STANLEY SULTAN, Ph.D., Associate Professor of English. A.B., Cornell University, 1949; A.M., Boston University, 1950; Ph.D., Yale University, 1955. (1959-)
- ERIKA ELISABETH THEOBALD, Ph.D., Assistant Professor of German. Ph.D., University of Vienna, 1948. (1964-)
- WILLIAM E. TOPKIN, Ed.D., Lecturer in Education, Assistant Dean of Students. A.B., Clark University, 1960; M.A., 1963; Ed.D., 1967. (1964-)
- EDWARD N. TRACHTENBERG, Ph.D., Associate Professor of Chemistry. A.B., New York University; A.M., Harvard University, 1951; Ph.D., 1953. (1958-)

- ALDO PETER TRUANT, Ph.D., Professor (affiliate) of Biology. A.B., University of Western Ontario, 1944; Ph.D., Yale University, 1949. (1959-67)
- MICHAEL D. TRUE, Ph.D., Visiting Lecturer in English. A.B., University of Oklahoma, 1955; M.A., University of Minnesota, 1957; Ph.D., Duke University, 1964. (1967-)
- INA C. UZGIRIS, Ph.D., Assistant Professor of Psychology. B.S., University of Illinois, 1957; M.A., 1960; Ph.D., 1962. (1966-)
- ROGER CARLETON VAN TASSEL, Ph.D., Professor of Economics. A.B., Union College, 1947; A.M., Cornell University, 1950; Ph.D., Brown University, 1956. (1954-)
- ANTHONY VARJABEDIAN, M.D., Lecturer in Psychology. A.B., Clark University, 1941; M.D., Yale University, 1944. (1954-67)
- HELEN G. VASSALLO, Ph.D., Assistant Professor of Zoology. B.S., Tufts University, 1953; M.S., 1955; Ph.D., Clark University, 1967. (1967-)
- ARTHUR J. VIDICH, Ph.D., Visiting Professor of Sociology. B.A., University of Michigan, 1944; M.A., University of Wisconsin, 1948; Ph.D., Harvard University, 1953. (1965; 1967-)
- WILLIAM VOGEL, Ph.D., Associate Professor (affiliate) of Psychology. B.A., Wesleyan University, 1955; M.A., Clark University, 1957; Ph.D., 1959. (1964-)
- MARIAN M. WALTER, Ph.D., Assistant Professor of Romance Languages. A.B., High Point College, 1948; M.A., University of North Carolina, 1954; Ph.D., 1964. (1965-67)
- SEYMOUR WAPNER, Ph.D., G. Stanley Hall Professor of Genetic Psychology. A.B., New York University, 1939; A.M., University of Michigan, 1940; Ph.D., 1943. (1948-)
- HENRY JOHN WARMAN, Ph.D., Professor of Geography. B.S. in Ed., Bloomsburg State Teachers College, 1932; Ed.M., Temple University, 1938; Ph.D., Clark University, 1945. (1943-)
- JOSEPH WEINREB, M.D., Professor (affiliate) of Psychology. A.B., Vanderbilt University, 1931; M.D., 1935. (1947-67)
- WEN-YANG WEN, Ph.D., Associate Professor of Chemistry. B.S., National Taiwan University, 1953; Ph.D., University of Pittsburgh, 1958. (1962-)
- JANET MAE WESSON, M.A., Instructor in Romance Languages. A.B., Rivier College, 1965; M.A., Clark University, 1967. (1967-)
- JEFFERSON A. WHITE, Ph.D., Associate Professor of Philosophy. B.A., Baylor University, 1952; B.D., Yale University, 1957; A.M., Yale University, 1960; Ph.D., 1964. (1961-)
- MORTON WIENER, Ph.D., Professor of Psychology. B.S., College of the City of New York, 1949; M.S., 1950; Ph.D., University of Rochester, 1953. (1957-)
- JAMES W. WIGHTMAN, Ph.D., Assistant Professor (affiliate) of Economics. B.S., Franklin and Marshall College, 1954; M.A., Clark University, 1956; Ph.D., 1967. (1967-)
- JOACHIM F. WOHLWILL, Ph.D., Professor of Psychology. A.B., Harvard College, 1949; Ph.D., University of California, 1957. (1958-)
- PETER H. WOLFF, M.D., Lecturer in Psychology. M.D., University of Chicago, 1950. (1961-)
- ALLEN M. ZWICKEL, Ph.D., Associate Professor of Chemistry. A.B., Cornell University, 1956; Ph.D., University of Chicago, 1959. (1961-)

Research Associates, 1966-67

- LEONARD CIRILLO, Department of Psychology. B.A., The City College of New York, 1958; M.A., Clark University, 1962; Ph.D., Clark University, 1965.
- BURTON NOBLE GATES, Department of Biology. A.B., Clark University, 1905; A.M., 1906; Ph.D., 1909.

- JESSE D. GELLER, Department of Psychology. A.B., The City College of New York, 1960; M.A., University of Connecticut, 1961; Ph.D., University of Connecticut, 1966.
- JEAN O. LOVE, Department of Psychology. A.B., Erskine College, 1941; M.A., Winthrop College, 1949; Ph.D., University of North Carolina, 1953.
- DAVID A. F. MARSHALL, Department of Biology. B.A., University of Nevada, 1959; M.S., University of Washington, 1961; Ph.D., Duke University, 1965.
- KENICHI NARA, Department of Chemistry. B.Sc., Tokushima University, 1956; M.Sc., Kyoto University, 1958; Ph.D., Kyoto University, 1961.
- GEORGE RAND, Department of Psychology. B.A., The City College of New York, 1959; M.A., Clark University, 1961; Ph.D., Clark University, 1965.
- DESH RAJ SACHDEV, Department of Chemistry. B.Sc., Agra University, 1952; M.Sc., Kucknow University, 1954; Ph.D., McGill University, 1966.
- KESHAV NARAIN SHRIVASTAVA, Department of Physics. B.Sc., Agra University, 1961; M.Sc., University of Allahabad, 1963; Ph.D., Indian Institute of Technology, 1966.

Academic Boards and Committees, 1966-67

The President is an *ex officio* member of all boards and committees.

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ATHLETICS:	Warman, <i>chairman</i> , Baker, Granger, Hughes, Maxwell, and Stubbe.
SCHOLARSHIPS:	S. S. Hayden, <i>chairman</i> , Baker, Barron, Campbell, Potier, and Van Tassel.
EVENING COLLEGE BOARD:	Dolphin, <i>chairman</i> , Balko, Blinderman, Borg, Edwards, Hilsinger, Krus, Lee, and White.
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RESEARCH COUNCIL:	Beard, S. Cohen, Grob, Kaplan, Kohin, Olson, Zwickel, and Lee (<i>ex officio</i>).

Scholars and Fellows Appointed Under Clark University Funds 1966-67

Alumni Association Fellow

Mei-sheng Tai, Chemistry, B.S., National Taiwan University, 1962.

George S. Barton Fellows

Paul A. Erickson, Sociology, A.B., Clark University, 1966.

Cornelius H. Riordan, Sociology, B.S., Fitchburg State College, 1962.

Joseph F. Donnelly Fellows

John L. Allen, Geography, B.A., University of Wyoming, 1963; M.A., *ibid.*, 1964.

Rohan S. Andrew, Geography, B.A., University of Nottingham, 1965.

Ward J. Cromer, Psychology, A.B., Oberlin College, 1962; Clark University, 1964.

William J. Drazen, Economics, B.A., Clark University, 1965; M.A., University of Pennsylvania, 1966.

John F. Hung, Chemistry, B.S., National Taiwan University, 1961.

Frederick E. Oxtoby, Geography, B.Ed., University of British Columbia, 1965.

Suk-Han Shin, Geography, A.B., Seoul National University, 1954.

Austin S. Garver Scholars

Linda L. Carlson, History, B.S.Ed., Pacific Lutheran University, 1966.

M. Susan Burns, History, B.S.Ed., West Chester State College, 1966.

Robert K. Jordan, Jr., Economics, B.A., University of Maine, 1964.

Marian E. Kraft, Economics, B.S., University of Hartford, 1964.

Joseph M. O'Donnell, History, B.A., College of the Holy Cross, 1966.

John H. Perlin, Sociology, B.A., University of California at Santa Barbara, 1966.

Graduate School Scholars and Fellows

Gordon A. Hinzmann, Jr., Geography, B.A., Wayne State University, 1966.

Robert E. Mecca, Economics, B.A., Providence College, 1966.

F. Stephen Trimby, Economics, B.Sc., Assumption College, 1966.

Kuo-Cheng Tseng, Economics, B.A., National Taiwan University, 1962.

George Frisbie Hoar Scholars

Isa M. Gerstein, Psychology, B.A., Rutgers University, 1964.

Michele M. Hilden, History, A.B., Emmanuel College, 1963.

Ann Marie Jackola, History, B.A., Clark University, 1956; M.A., Cortland College of Education, 1959.

Barbara Klein, Psychology, B.A., Brooklyn College, 1957; M.A., Clark University, 1963.

Charles H. Thurber Scholar

Jinnque Rho, Biology, B.S., Seoul National University, 1961.

Appointments From Other Funds, 1966-67

Danforth Foundation

Ogretta Humphries Vaughn, Psychology, B.S., Howard University, 1954; M.A., Clark University, 1959.

Higher Education Act Title V-C Fellows

James P. Barbato, Geography, B.A., Assumption College, 1965; M.A.Ed., Clark University, 1966.

John H. Boyd, Geography, B.S., Columbia University, 1966.

Johnny Holmes, Geography, North Carolina College.

Alan P. Muir, Geography, B.A., Castleton State College, 1966.

Merrie Stoddard Muir, Geography, A.B., Clark University, 1966.

A. Keith Van Winkle, Geography, B.A., Middlebury College, 1964; University of Innsbruck, 1964-66.

W. Davis Van Winkle, Geography, B.A., Middlebury College, 1963.

National Aeronautics and Space Administration

James A. Albright, Chemistry (Sem. II), B.S., State University of New York, 1966.

Robert A. Frenette, Mathematics, B.S., University of Nebraska, 1964; M.A., Clark University, 1966.

Eileen C. Friel, Chemistry (Sem. I), B.S., Marymount Manhattan College, 1966.

Joseph A. Keenan, Chemistry, B.S., Spring Hill College, 1964.

Karen W. Kellogg, Biology, A.B., Smith College, 1965.

Thomas B. Kinraide, Biology, A.B., Boston University, 1965.

Thomas J. Whall, Chemistry, A.B., St. Anselm's College, 1964.

Peter D. Yedinak, Physics, B.Sc., Union College, 1962.

John H. Young, Physics, B.A., Gettysburg College, 1962; M.Sc., University of New Hampshire, 1964.

National Defense Education Act Title IV Fellows

Gerard W. Gawalt, History, B.A., Northeastern University, 1965.

Sidney Hart, History, B.A., Long Island University, 1964.

John B. Hench, History, B.A., Lafayette College, 1965.

Stephen P. Hobart, Geography, B.A., Carroll College, 1966.

John H. Long, History, A.B., Northeastern University, 1966.

Elias Meymaris, Chemistry, B.S., Tufts University, 1959.

Kenneth J. Moynihan, History, B.A., Holy Cross College, 1966.

Nathaniel G. Mullener, Psychology, A.B., George Washington University, 1965.

Lee E. Phillips, Geography, A.B., Dartmouth College, 1965.

Lewis D. Rosenthal, Geography, B.B.A., New York City College, 1943; Certificate, Westminster College, 1944; M.A., New School for Social Research, 1964.

Stephen W. Slocumb, History, B.A., Northeastern University, 1966.

Edmund B. Thomas, History, B.S., John Carroll University, 1963; M.A., Kent State University, 1964.

National Institute of Mental Health

A. Harvey Baker, Psychology, A.B., Harvard University, 1958; M.E., *ibid.*, 1960.

Andrew R. Goldman, Psychology, B.A., Harvard College, 1963.

- Paulette Lebensfeld, Psychology, A.B., Queens College, 1960; M.A., New School for Social Research, 1962; M.A., Clark University, 1965.
- Peter A. Nickerson, Biology, A.B., Brown University, 1963; M.A., Clark University, 1965.
- Michael E. Somers, Biology, A.B., University of Bridgeport, 1951; M.A., Clark University, 1962.
- Donelda J. Stayton, Psychology, B.Sc., Denison University, 1962; M.A., Clark University, 1964.

National Science Foundation

- R. Bruce Cassel, Chemistry (Graduate Trainee), B.S., Dartmouth College, 1965.
- Julie Rogers Gittins, Psychology (Graduate Fellow), B.A., Bennington College, 1964; M.A., Clark University, 1966.
- Richard H. Jackson, Geography (Graduate Trainee), B.S., Brigham Young University, 1965; M.S., *ibid.*, 1966.
- James J. Kaput, Mathematics (Summer Fellow), B.S., Worcester Polytechnic Institute, 1964; M.A., Clark University, 1966.
- Richard Melito, Psychology (Graduate Trainee), B.E., City College of New York, 1964.
- Richard G. Montgomery, Mathematics (Graduate Trainee), B.A., San Francisco State College, 1960; M.A.T., Brown University, 1965.
- Gayle P. Orczyk, Biology (Graduate Trainee), B.A., Keuka College, 1966.
- Sarah J. Parker, Chemistry (Graduate Trainee), B.A., St. Joseph's College, 1965.
- Richard O. Reiss, Geography (Science-Faculty Fellow), B.A., University of Rochester, 1951; M.A., Columbia University Teacher's College, 1955.
- Marjorie Rosenman, Psychology (Graduate Fellow), B.S., Jackson College, 1965.
- Laura Deming Stevens, Mathematics (Graduate Trainee), B.S., Bates College, 1965.
- Rodrigue M. Sutherland, Biology (Science-Faculty Fellow), B.S., Providence College, 1949; M.A.T., Brown University, 1961.
- John H. Young, Physics (Summer Fellow), B.A., Gettysburg College, 1962; M.Sc., University of New Hampshire, 1964.
- Marjorie A. Zoller, Chemistry (Summer Fellow and Graduate Trainee), B.A., Clarke College, 1965.

United States Steel Foundation

- Louise J. Rundstrom, Economics, A.B., Clark University, 1965.

Woodrow Wilson Foundation

- Edward D. Reif, Psychology, B.A., Rutgers University, 1966.

Teaching Assistants, Teaching Assistant Scholars and Fellows, 1966-67

- Michael J. Ackerman, Biology, B.A., Hofstra University, 1966.
- Robert L. A. Adams, Geography, A.B., Williams College, 1961; M.A., Clark University, 1966.
- James A. Albright, Chemistry, B.S., State University of New York, 1966.
- Rohan S. Andrew, Geography, B.A., University of Nottingham, 1965.
- Stanley P. Baniukiewicz, Chemistry, B.S., University of Massachusetts, 1965.
- Peter Barss, English, A.B., Clark University, 1964.
- Duane D. Baumann, Geography, B.S.Ed., Illinois State Normal University, 1962; M.A., *ibid.*, 1963.

- Sylvia F. Bernstein, English, B.S. in General Studies, Clark University Evening College, 1966.
- Philippa J. Carrington, Mathematics, B.A., Connecticut College, 1966.
- Harold R. Cole, English, A.B., University of Rhode Island, 1963.
- Theodore C. Crusberg, Chemistry, B.A., University of Connecticut, 1963; M.S., Yale University, 1964.
- D. Michael Deeley, Mathematics, A.B., Clark University, 1964.
- Borden D. Dent, Geography, B.S., Towson State College, 1963; M.A. cand.
- George T. Downey, Geography, B.S.Ed., Worcester State College, 1963; M.A., Clark University, 1965.
- Paul A. Erickson, Sociology, A.B., Clark University, 1966.
- Kathleen M. Fitzgerald, History, B.A., Emmanuel College, 1965.
- Sergio Franco, Physics, Dottore in Fisica, University of Rome, 1966.
- Robert A. Frenette, Mathematics, B.S., University of Nebraska, 1964; M.A., Clark University, 1966.
- Michael A. Gansecki, Sociology, B.S., Holy Cross College, 1965.
- Steven J. Gilbert, Psychology, A.B., Boston University, 1966.
- John S. Gittens, Psychology, B.A., Trinity College, 1965.
- Bradford C. Gooch, English, A.B., Washington & Lee University, 1958.
- Lorraine M. Griffin, Biology, B.A., Anna Maria College, 1963.
- Ann F. Gut, Education, B.A., Russell Sage College, 1950.
- Sidney Hart, History, B.A., Long Island University, 1964.
- Michele M. Hilden, History, A.B., Emmanuel College, 1963.
- Mrs. Eleanor Hutchinson, Education, A.B., University of Maine, 1939.
- Robert K. Jordan, Jr., Economics, B.A., University of Maine, 1964.
- James J. Kaput, Mathematics, B.S., Worcester Polytechnic Institute, 1964.
- William J. Kennedy, Biology, B.S., Siena College, 1966.
- In Kyu Kim, Chemistry, B.S., Seoul National University, 1962; M.Sc., *ibid.*, 1964.
- Raj Kishore, Chemistry, B.Sc., Lucknow University, 1961; M.Sc., *ibid.*, 1962.
- Barbara Klein, Psychology, B.A., Brooklyn College, 1957; M.A., Clark University, 1963.
- Marian E. Kraft, Economics, B.S., University of Hartford, 1964.
- Lise M. Laforce, Education, B.A., Rivier College, 1966.
- Merlin P. Lawson, Geography, A.B., University of Buffalo, 1963; M.A., Clark University, 1966.
- Ralph A. Lennon, Geography, B.A., University of Massachusetts, 1965.
- Gordon M. Marshall, Jr., History, B.A., Whitier College, 1964.
- Donald M. Matusen, History, A.B., Roosevelt University, 1963.
- Neil H. J. McBain, History, B.A., University of British Columbia, 1964; M.A., Lehigh University, 1965.
- Henry R. McCutcheon, Geography, B.A., McMaster University, 1964; M.A., Clark University, 1966.
- Jill M. McGrath, Education, B.A., College of Mt. St. Vincent, 1966.
- John F. Meyers, History, A.B., University of Minnesota, 1963.
- Robert F. Miles, Jr., English, A.B., Clark University, 1962.
- Russell W. Muncaster, Geography, B.A., Waterloo University College, 1966.
- Caroline A. Murphy, Economics, A.B., Regis College, 1960; M.A., Clark University, 1963.
- Mrs. Sung Hye Park-Yim, Chemistry, B.S., Seoul National University, 1963; M.S., *ibid.*, 1965.

- John H. Perlin, Sociology, B.A., University of California at Santa Barbara, 1966.
 Robert A. Prior, Biology, B.A., Merrimack College, 1965.
 Howard G. Sachs, Biology, B.S., Worcester Polytechnic Institute, 1965.
 Douglas L. Schmucker, Biology, B.S., Kenyon College, 1965.
 Mark C. Segal, Biology, B.S., University of Illinois, 1965.
 Marshall C. Severance, Mathematics, B.S.Ed., Bridgewater State College, 1963.
 Shyam S. Sharma, Geography, A.B., Banaras Hindu University, 1955; M.A., *ibid.*, 1957.
 William Spezeski, Mathematics, B.S., University of Massachusetts, 1964; M.A., Clark University, 1966.
 Edward J. Stefanini, Mathematics, B.S., Worcester Polytechnic Institute, 1960.
 Mrs. Laura D. Stevens, Mathematics, B.S., Bates College, 1965.
 Clara M. Takesian, Physics, B.S., Simmons College, 1966.
 Robert W. Thompson, Geography, B.A., Worcester State College, 1965.
 Dario Valdes, Education, B.A., Atlantic Union College, 1964.
 Barbara E. Vanderwaart, Chemistry, B.A., Wheaton College, 1966.
 Ralph F. Van Roy, Sociology, B.A., Hamilton College, 1966.
 Jonathan L. Weber, Physics, B.S., University of Rochester, 1966.
 Janet M. Wesson, Education, B.A., Rivier College, 1965.
 Neils West, Geography, B.A., Boston University, 1965.
 Robert W. Wilson, Chemistry, State University College of Education at Oswego, 1962.
 John L. Wood, Chemistry, B.Sc., University of London, 1963.
 Robert J. Zabek, Mathematics, Stonehill College, 1966.

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Life Members

Roland A. Erickson, A.M. (1951-)	Greenwich, Conn.
A. D. Ross Fraser, A.B., L.H.D. (1960-)	Rome, N. Y.
Jacob Hiatt, A.M. (1955-)	Worcester, Mass.
John Jeppson, M.B.A., Sc.D., (1948-)	Worcester, Mass.
Richard W. Mirick, LL.B. (1957-)	Worcester, Mass.
Joseph C. Molder, M.B.A. (1954-)	Worcester, Mass.

Term Members

Mrs. Milton P. Higgins (1962-)	Worcester, Mass.
Frederic W. Howe, Jr., A.B. (1962-)	New Braintree, Mass.
Alden P. Johnson, A.B. (1962-)	Worcester, Mass.
Robert A. Miller, A.B., C.P.A. (1963-)	Worcester, Mass.
Stephen T. Riley, Ph.D. (1963-)	Weston, Mass.
Constance E. Smith, Ph.D. (1963-)	Cambridge, Mass.
Elwyn C. Hale (1963-)	Piedmont, Calif.
Ben H. Bagdikian, A.B., L.H.D., Litt.D. (1964-)	Washington, D. C.
Fairman C. Cowan, LL.B. (1964-)	Worcester, Mass.
Mrs. Robert H. Goddard, A.M., Sc.D. (1964-)	Worcester, Mass.
Archie Greenberg, A.M. (1965-)	Miami Beach, Fla.
C. Waller Barrett, Litt.D., L.H.D. (1966-)	Charlottesville, Va.
Francis A. Harrington, A.B. (1966-)	Worcester, Mass.
David R. Porter, A.B. (1966-)	Wellesley, Mass.

Members Elected by the Alumni

Samuel N. Behrman, A.M., Litt.D. (1962-)	New York, N. Y.
Chester Bland, A.M. (1963-)	West Hartford, Conn.
John J. Singer, Jr., Ph.D. (1964-)	Hollis, N. H.
Shannon B. McCune, Ph.D. (1965-)	Montgomery, N. Y.
Gustaf Coontz, A.B. (1966-)	Worcester, Mass.
Robert A. Nelson, Ph.D., Sc.D. (1967-)	McLean, Va.

Emeriti

Howard M. Booth (1939-1965)	Worcester, Mass.
Francis H. Dewey, Jr., LL.B. (1934-1962)	Worcester, Mass.
Samuel H. Dolbear, Sc.D. (1940-1961)	New York, N. Y.

Committees of the Board of Trustees (1966-1967)

EXECUTIVE:	Jeppson, <i>chairman</i> , Higgins, <i>vice chairman</i> , Cowan, Hiatt, Howe, Miller, Mirick, and Porter.
BUDGET AND FINANCE:	Miller, Mirick, Molder, and Porter.
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NOMINATING:	Fraser, <i>chairman</i> , Riley, <i>vice chairman</i> , Erickson, Howe, Jeppson, Johnson, Smith, and *Hyde.
PHYSICAL PLANT:	Hiatt, <i>chairman</i> , Higgins, <i>vice chairman</i> , Behrman, Bland, Goddard, Harrington, Johnson, Kuniholm, Riley, Singer, *Baker, *Barron, *Billias, and *Bloodgood.
PLANNING AND DEVELOPMENT:	Cowan, <i>chairman</i> , Howe, <i>vice chairman</i> , Coontz, Fraser, Hale, Hiatt, Jeppson, Johnson, Porter, *Hyde, *Murphy, and *Gleason.
HONORARY DEGREES:	Bagdikian, <i>chairman</i> , Hale, <i>vice chairman</i> , Greenberg, McCune, Riley, Smith, *Campbell, *Holran, *Nunnemacher, *Schroeder, and *Warman.
AUDITING:	Singer, <i>chairman</i> , Bland, and Howe.
LIBRARY PLANNING SUB-COMMITTEE	Higgins, <i>chairman</i> , Barrett, Behrman, Goddard, Howe, Johnson, Riley, *Ahmadjian, *Barron, *Billias, *Cowardin, *Grob, and *Raffman.
TRUSTEE COMMITTEE ON THE PRESIDENCY	Jeppson, <i>Chairman</i> , Smith, <i>Vice Chairman</i> , Bagdikian, Mirick, and Riley.
*NON-TRUSTEE MEMBERS:	President Howard B. Jefferson, Dr. Vernon Ahmadjian, Dr. Robert W. Baker, Tilton M. Barron, Dr. George A. Billias, Willard G. Bloodgood, Dr. Robert F. Campbell, Dr. Samuel P. Cowardin, III, Charles K. Gleason, Dr. Gerald N. Grob, Bruce G. Holran, Robert M. Hyde, Dr. Dwight E. Lee, David L. Murphy, Dr. Rudolph F. Nunnemacher, Rely Raffman, Dr. Neil Schroeder, and Dr. Henry J. Warman.

Academic and Administrative Officers

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James M. Arnold, A.B., *Assistant Director of Development*
Arnold C. Bailey, A.B., *Assistant Director, Goddard Library Program*
Robert W. Baker, Ph.D., *Dean of Students*
Charlotte L. Ball, *Guidance Counselor*
Tilton M. Barron, B.L.S., *Librarian*
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John E. Snow, *Manager, Printing Department*
William E. Topkin, Ed.D., *Assistant Dean of Students*

Academic Calendar for 1967-68

1967

Friday, September 8
 Monday, September 11
 Tuesday, September 12
 Thursday, October 12
 Monday, October 30

New Student Registration Begins.
 First semester registration.
 Classes begin.
 Columbus Day. Not a holiday.
 Last day for receiving applications for admission to candidacy for the degree of Doctor of Philosophy in June, 1968.
 Mid-semester reports due at Registrar's Office at 9 a.m.
 Veteran's Day. Not a holiday.
 Beginning of Thanksgiving recess at close of classes.
 Thanksgiving recess ends at 8:30 a.m.

Saturday, November 11
 Wednesday, November 22
 Monday, November 27
 Monday, December 11-
 Friday, December 15
 Saturday, December 16

Pre-registration for second semester.
 Beginning of Christmas recess at close of classes.

1968

Tuesday, January 2
 Tuesday, January 2
 Wednesday, January 3
 Tuesday, January 9
 Monday, January 15
 Monday, February 5
 Tuesday, February 6
 Friday, February 9

End of Christmas recess at 8:30 a.m.
 No classes.
 Semester examinations begin.
 Last day of examinations. Mid-year recess begins at 5 p.m.
 Independent Study Period begins.
 Second semester registration.
 Classes begin.

Thursday, February 22
 Friday, March 22
 Saturday, March 23
 Monday, April 1
 Monday, April 22-
 Friday, April 26
 Monday, May 6

Last day for receiving applications for admission to candidacy for the degrees of Master of Arts and Master of Arts in Education in June, 1968.
 Washington's Birthday. Not a holiday.
 Mid-semester reports due at Registrar's Office at 9 a.m.
 Beginning of spring recess at close of classes.
 End of spring recess at 8:30 a.m.

Monday, May 13

Pre-registration for first semester 1968-69.
 Dissertations for the degree of Doctor of Philosophy due at Registrar's Office at 9 a.m.
 Theses for degrees of Master of Arts and Master of Arts in Education due at Registrar's Office at 9 a.m.

Thursday, May 16
 Friday, May 17
 Saturday, May 18
 Thursday, May 30
 Sunday, June 2

No classes.
 No classes.
 Semester examinations begin.
 Memorial Day. A holiday.
 Commencement.

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Clark University Bulletin

WORCESTER, MASSACHUSETTS 01610

General Catalog 1968/69



Additional Information

Persons interested in other information about Clark University should address the appropriate officer of administration listed below:

<i>General University Affairs:</i>	Dr. Frederick H. Jackson President
<i>General College Affairs:</i>	Dr. Robert F. Campbell Dean of the College
<i>Undergraduate Student Affairs:</i>	Dr. Robert W. Baker Dean of Students
<i>Admission to the College:</i>	Mr. Richard W. Pierson Director of Admissions
<i>Financial Aid:</i>	Mr. Robert M. Kidd Financial Aid Officer
<i>Graduate School Affairs:</i>	Dr. Saul B. Cohen Dean of the Graduate School
<i>Evening College and Summer School Affairs:</i>	Mr. Thomas J. Dolphin Director
<i>Alumni Affairs:</i>	Mr. James D. Van Houten Alumni Secretary
<i>Records and Transcripts:</i>	Mr. Gerard T. Corcoran Registrar
<i>University Address:</i>	950 Main Street Worcester, Massachusetts 01610
<i>University Telephone:</i>	Area Code 617 Telephone: 793-7711

Clark University reserves the right to amend any administrative policy described in this Catalog without prior notice to persons who might thereby be affected. Information about expenses applies to the academic year, 1968-69.

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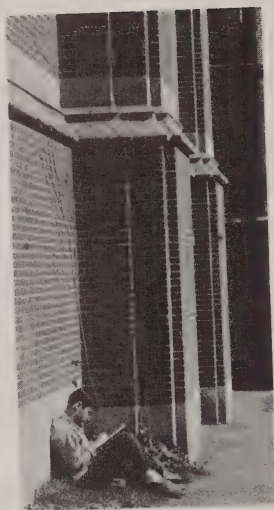
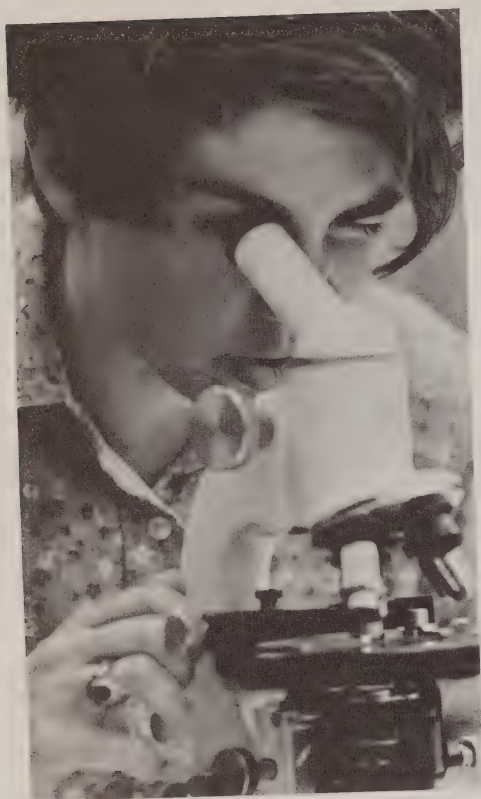
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THE
UNIVERSITY

General Information

<i>Corporate Name:</i>	Trustees of Clark University
<i>President:</i>	Dr. Frederick H. Jackson
<i>Incorporation:</i>	1887
<i>Function:</i>	Independent university of liberal arts and business administration for men and women
<i>Degrees Conferred:</i>	Bachelor of Arts Bachelor of Fine Arts Bachelor of Science in Business Administration Bachelor of Science in General Studies Master of Arts Master of Arts in Education Master of Business Administration Doctor of Education Doctor of Philosophy
<i>Enrollment:</i>	1692
<i>Faculty:</i>	116
<i>Endowment,</i>	Book Value: \$10,263,741
<i>December 31, 1967:</i>	Market Value: \$14,418,437
<i>Library:</i>	270,000 volumes 50,000 maps and charts



The University

Clark University is a small urban, independent, co-educational university of liberal arts and business administration, founded in 1887. With a current enrollment of 1349 undergraduates—762 men and 587 women—and 343 graduate students, the University is situated on a compact 35-acre campus in Worcester, the third largest New England urban center.

The University's activities include undergraduate programs leading to the bachelor's degree in the arts and sciences, graduate study to and beyond the doctorate, and university-level educational programs for area adults. These activities are carried on by four divisions: The College, The Graduate School, The Evening College and The Summer School.

As an institution, Clark is committed to scholarly excellence and intellectual creativity, faith in the ideals of liberal undergraduate education, a concern for graduate education and the values inherent in the small university. These beliefs underlie everything the University is or does, and in combination are the essentials which give Clark a unique position among the more than 2,000 colleges and universities in America.

In practice, the fact that the University has by design remained small in numbers in an age of giant universities has enabled Clark to offer its students a rare educational experience. Through a close association and partnership between the College and the Graduate School, the University effectively combines some of the best features of the small liberal arts college with the scholarly research and advanced programs of the university, to the advantage of both levels.

This exposure is enhanced further by the close personal relationships maintained at Clark between and among faculty, undergraduates and graduate students, made possible by a low faculty to student ratio of one to fifteen, and by a small enrollment in the Graduate School.

Clark College seeks to provide its students with essential knowledge and understanding through concentration in one of eighteen fields of study and the selection of a variety of courses in related or other disciplines. In the Graduate School, the Master's degree is offered in fifteen areas, and doctoral programs are available in eleven fields. A student can receive instruction leading to the Doctor of Philosophy degree in biology, chemistry, chemical physics, economics, geography, history, international relations, mathematics, physics, and psychology. A Doctor of Education degree also is offered. Master's degrees can be obtained in these fields and also in business administration, English, government, and sociology. The undergraduate may take courses in these fields, except business admin-



Dr. Frederick H. Jackson
President of the University

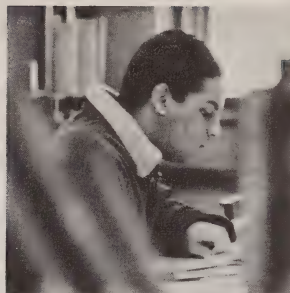
istration, and, in addition, in anthropology, classics, comparative literature, fine arts, German, geology, linguistics, music, philosophy, Romance languages, and Russian.

For the superior undergraduate, there are many opportunities to observe and even participate in research. Some departments have regular programs through which outstanding undergraduates take advanced courses and participate actively in the research of the department.

For undergraduates, the College offers on an optional basis a three-week January Study Period during which students have an opportunity to enroll in a number of special projects which involve independent work with a minimum of faculty guidance. Several foreign study trips are also available during this period.

The University's insistence on high academic achievement, together with its unique interrelationships between the undergraduate and graduate programs, accounts in large measure for the fact that over fifty percent of the graduates of Clark College continue their education at graduate or professional schools. It accounts, too, for the fact that a large number of Clark's graduates have earned Woodrow Wilson and Danforth Fellowships, Fulbright grants and other national awards for graduate study.

Most important, these accomplishments are significant reflections of the scholarly teaching and productive research of the Clark faculty. Over eighty per cent of its members hold the Ph.D. degree, a ratio which is among the highest in the nation. In the past few years, the faculty has published several hundred scholarly articles and has written a number of books.



In addition to its excellent academic programs, Clark University offers its students many opportunities for rewarding experiences in broad programs of co-curricular and athletic activities—both organized and informal—as well as in cultural activities of high quality both at the campus and within the Worcester community.

Admission to Clark is highly competitive, and is based on non-discriminatory standards. Tuition and other charges for 1968-69 are approximately \$3,100, including \$2,000 for tuition and about \$1,100 for room and board. Nearly one-half of the students receive financial aid in the form of scholarships, grants, loans or part-time employment.

The University's History

Clark University was founded in 1887 chiefly through the efforts of two men, Jonas Gilman Clark, a sagacious merchant and businessman for whom the University is named, and Dr. Granville Stanley Hall, an educator of breadth and wisdom. Reversing the pattern at most colleges and universities in the United States, Clark was founded as a graduate institution. Undergraduate liberal arts education was established 15 years later in 1902.

Mr. Clark, a native of Worcester environs, amassed wealth during the California Gold Rush by supplying miners and others with manufactured goods. He increased his personal fortune through prudent business transactions initiated after his return to the East at the end of the Civil War. He later settled in Worcester where he became interested in civic affairs. It was during this period of his life that he decided to endow a new institution of higher learning. His last years were largely devoted to this philanthropic endeavor, with the assistance of a group of prominent Worcester citizens.

In 1887, the Trustees of Clark University were incorporated. Dr. Hall was appointed the first president of the University. He had been a professor of philosophy, psychology and education at The Johns Hopkins University, where he had established his reputation as a vigorous and original scholar.



Recognizing the need for graduate institutions in the United States (there was at that time only one titled graduate school in the United States—The Johns Hopkins University), President Hall began the organization of an educational institution which would be solely concerned with graduate study and research. As a result, Clark University became the second graduate school established in the United States. This unusual educational idea attracted the attention of a number of brilliant and creative scholars, who, upon President Hall's urging, joined the Clark faculty. They constituted one of the most outstanding communities of scholars the country had then known.

The first students entered the University in 1889 and its first two graduates received doctorates in 1891. By 1900, when Clark University became one of the 14 charter members of the Association of American Universities, the brilliance of both teachers and students had established the scholarly reputation of the University.

While Mr. Clark supported President Hall's concept of graduate education, he also was interested in an undergraduate college for men, particularly men who possessed limited financial resources. Accordingly, a codicil to his will, effective upon his death in 1900, provided for the establishment of an undergraduate college. In compliance with the codicil, the Trustees established Clark College in 1902, with an administration and faculty distinct from those of the graduate school. Carroll Davidson Wright, then serving as the first United States Commissioner of Labor, was selected as the first president of the College.

Clark College, from its beginning, had an educational philosophy which was marked by seriousness of purpose and hard work. Inasmuch as the bachelor's degree was granted after three years of study, as opposed to the more common four-year curriculum of the day, the student carried a heavy program of study. There were intramural contests rather than intercollegiate sports; extracurricular activities were at a minimum. Though entrance requirements were informal, a high standard of academic achievement was necessary to remain in College.

President Wright died in 1909. He was succeeded by Edmund Clark Sanford, a professor of psychology in the graduate school. When President Hall resigned in 1920, President Sanford felt the time was advantageous to unite the undergraduate college and graduate school. He resigned from the presidency of the College to return to teaching and scholarship, leaving the possibility open for the reorganization of the two entities under a single president. The Trustees endorsed the reorganizational plan, and began a search for a president to lead the University.

In 1920, Wallace Walter Atwood, a professor of physiography at Harvard University, was appointed by the Trustees as president. During his tenure, there were significant changes in both the educational program and physical plant. The three-year curriculum leading to the bachelor of arts degree was increased

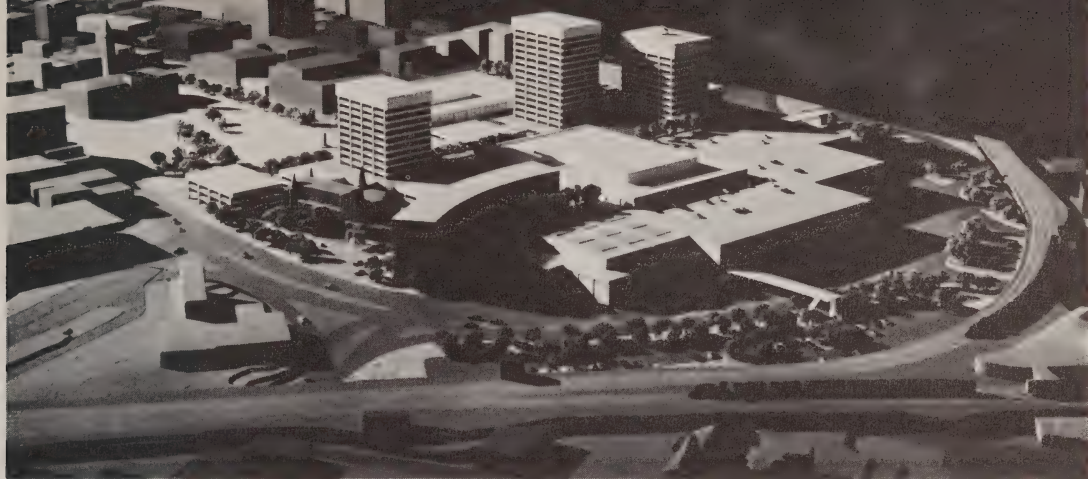
to four years. The Graduate School of Geography was founded in 1920. Participation in intercollegiate activities, including athletics, was encouraged. Additions to the physical plant included a men's dormitory, an athletic field, a gymnasium, a library tower and an auditorium. The latter was named Atwood Hall in honor of the president. In 1941, a Division of Business Administration was established, and Clark became a co-educational institution when the Trustees voted to create the Women's College of the University.

President Atwood retired in 1946. He was succeeded by Dr. Howard Bonar Jefferson, professor of philosophy and Director of the School of Philosophy and Religion at Colgate University. Under Dr. Jefferson's leadership, the University continued to develop and be enriched. In 1953, a chapter of Phi Beta Kappa, the national liberal arts honor society, was established, and the Evening College of Clark University was organized as an institution for adult learning. In 1958, the Institute of Human Development was established as an adjunct of the Department of Psychology. In 1964, it was renamed the Heinz Werner Institute of Developmental Psychology in honor of the late Dr. Heinz Werner, G. Stanley Hall Professor of Genetic Psychology, Emeritus, who served as chairman and as a director of the Institute until his death.

The University's physical plant doubled during Dr. Jefferson's tenure. A new chemistry laboratory (Jeppson Laboratory) was opened in 1958. In the following year, two new dormitories (Bullock Hall and Wright Hall) and a student center (Jefferson Hall) were opened. In 1964, a modern residential center (Johnson Hall, Sanford Hall and Little Commons) was completed. A second, three-unit residential center, the Dana Residence Center, opened in September, 1967. A year earlier, work was started on a new University library, named for Robert Hutchings Goddard.

The University's academic programs also were greatly broadened and strengthened during Dr. Jefferson's years as president. Doctoral programs in chemical-physics and education were inaugurated in 1961 and 1962, respectively, and a doctoral program in biology was re-established in 1962. Geology became an undergraduate major in 1963, and music in 1964. In 1965, a doctoral program in mathematics was established, and a three-week January study period for undergraduates was announced. In 1966, a doctoral program in physics was re-established and a master's program in English was inaugurated. In the same year, the undergraduate major leading to the Bachelor of Science in Business Administration degree was discontinued in favor of the traditional liberal arts major in economics, and the Bachelor of Fine Arts degree was established in the Evening College.

Dr. Jefferson retired in 1967 after 21 years as president. He has been succeeded by Dr. Frederick Herbert Jackson, former Vice President for Humanities and Social Sciences at New York University.



WORCESTER CENTRAL RENEWAL PROJECT

The University's Community

Worcester, a city of 185,000 people, is located among rolling hills in central Massachusetts. It is within easy driving distance of the region's other major cities and New England's rich resource of recreational, cultural and historical places of interest.

While internationally recognized as a city of diversified industry, Worcester is equally distinguished as a rapidly emerging educational center and for its wide range of cultural activities. Ten schools of higher learning, with more than 10,000 students enrolled, are located in or near the city, including Clark, Anna Maria College, Assumption College, Becker Junior College, the College of the Holy Cross, Leicester Junior College, Quinsigamond Community College, Worcester Junior College, Worcester Polytechnic Institute and Worcester State College. In addition, nearby are the world-famous Worcester Foundation for Experimental Biology, The American Antiquarian Society and the site for the University of Massachusetts Medical School, scheduled to open in 1970.

Individually and cooperatively Worcester's colleges annually sponsor broad programs of cultural activities. Among other major cultural attractions in Worcester are the world-renown Worcester Art Museum; the Higgins Armory Museum; Worcester Historical Society and the Worcester Public Library. Also, the Worcester Music Festival presents, as it has for more than a century, an annual series of concerts by the world's great performers. Some of the other outstanding events held throughout the year include theatrical productions, symphonic concerts, light operas, folk festivals and lecture series.

Keenly aware of the challenges of the future urban center, Worcester has launched an extensive redevelopment program to modernize both residential and commercial areas of the Central Business District. Foremost among these projects is a massive \$50 million renewal program, started in 1967.

The University Campus

Clark University is an urban institution, located two miles from Worcester's business center. The University's 25 major buildings are situated on a 35-acre campus. Nearby the campus is the University's athletic field and a tract of 20 acres, known as the Hadwen Arboretum.

CLARK HALL

The first building erected on the campus was Jonas G. Clark Hall, a four-story granite and brick structure. Built in 1887, it houses the offices of the Evening College, the Summer School, the Placement Office, and many of the offices and classrooms of the departments of instruction.

SCIENCE BUILDING

Clark's second oldest building is the Science Building, built also in 1887. It was the site of the experimentation and research by Dr. Robert H. Goddard, "Father of the Space Age," and Dr. Albert A. Michelson, America's first Nobel Prize winner. The building has been remodeled to provide new research and instruction facilities for the Biology and Physics Departments.

JEPPSON LABORATORY

Jeppson Laboratory, completed in 1958, has modern research and instruction facilities for the Chemistry Department, and houses Johnson Auditorium, a multipurpose lecture hall seating 174 persons, and Kraus Library, a specialized collection of chemical periodicals.

THE GODDARD LIBRARY

The University's new library, named for Dr. Robert H. Goddard, is expected to be completed in December, 1968. It will house the University's collection of more than 270,000 volumes and will have over 1,000 individual reading areas.

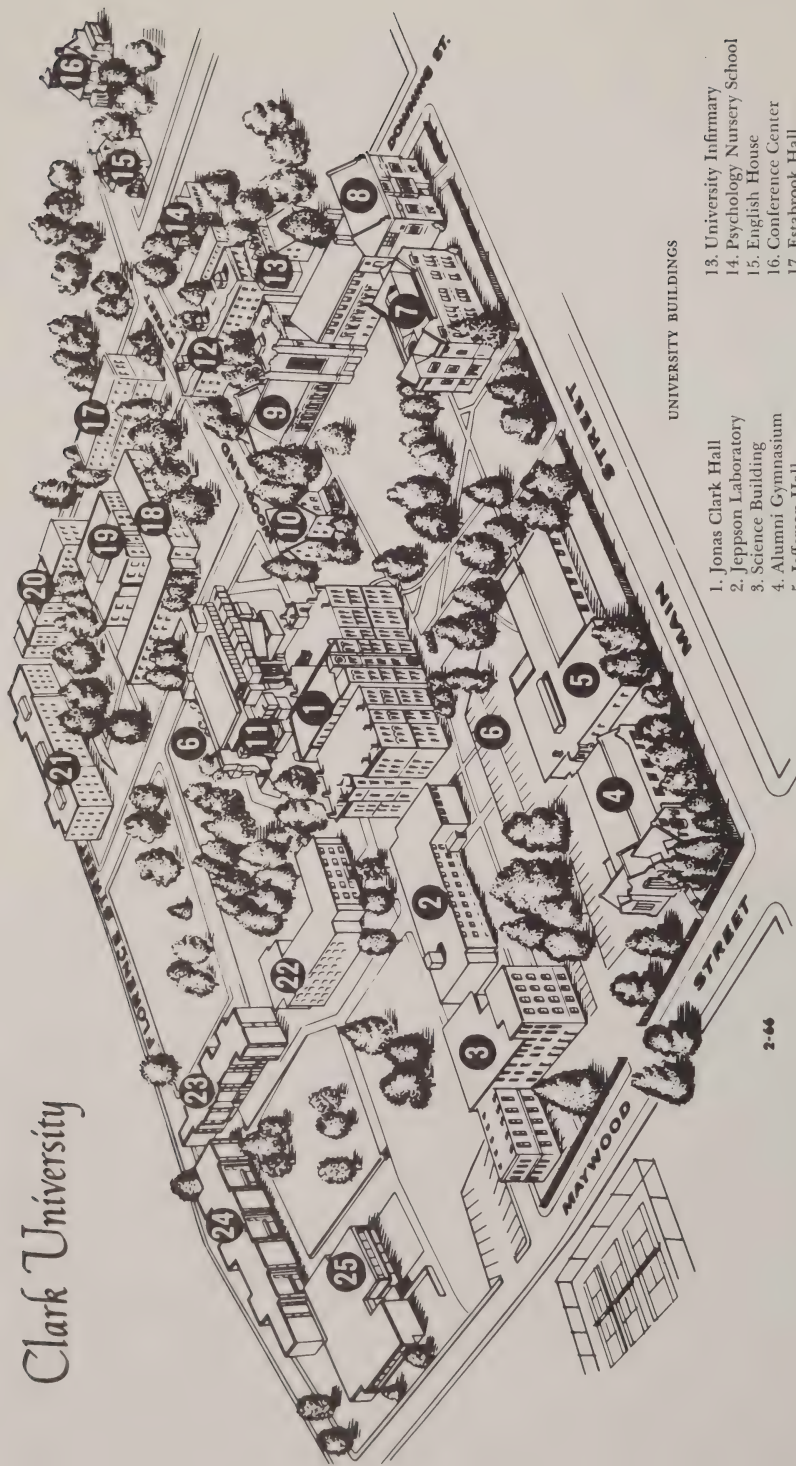


ATWOOD HALL	Atwood Hall is an 800-seat auditorium. It also contains the Blue Room for smaller lectures and meetings, and the offices and classrooms of the Fine Arts Department.
GEOGRAPHY BUILDING	Site of America's first Graduate School of Geography, the Geography Building also houses the offices of the President, Executive Vice President and other administrative officers, and the Geology Department. It also quarters the editorial offices of <i>Economic Geography</i> , a quarterly publication of Clark University.
ESTABROOK HALL	The Departments of German, Music, Mathematics and Russian, the University Computer Center, and Central Services, are located in Estabrook Hall.
ALUMNI GYMNASIUM	Alumni Gymnasium provides a gymnasium seating 800 persons, shower and locker facilities for intramural and intercollegiate athletics, and the offices of the Department of Physical Education. On the second floor is the Alumni Office and Alumni Lounge, a comfortable meeting room for University organizations.
WRIGHT HALL	Completed in 1959, this dormitory for 200 men has both double and single rooms.
BULLOCK HALL	Bullock Hall, a women's dormitory, also completed in 1959, houses 137 women students.

CHARLES A. DANA RESIDENCE CENTER



Clark University



UNIVERSITY BUILDINGS

- | | |
|--|-------------------------------|
| 1. Jonas Clark Hall | 13. University Infirmary |
| 2. Jeppson Laboratory | 14. Psychology Nursery School |
| 3. Science Building | 15. English House |
| 4. Alumni Gymnasium | 16. Conference Center |
| 5. Jefferson Hall | 17. Estabrook Hall |
| 6. Visitors Parking | 18. Wright Hall |
| 7. Geography Building | 19. Little Commons |
| 8. The Library | 20. Sanford Hall |
| 9. Atwood Hall | 21. Johnson Hall |
| 10. Blakeslee House | 22. Bullock Hall |
| 11. The Robert Hutchings Goddard Library (to be completed in 1968) | 23. Hughes Hall |
| 12. Downing Administration Center | 24. Dana Men's Dormitory |
| | 25. Dana Commons |

DOWNING
RESIDENCE
CENTER

The first major addition to the campus under Clark's ten-year development program, this center, opened in 1964, includes Johnson Hall, a dormitory for 150 women, Sanford Hall, which houses 146 men, and the Homer P. Little Student Commons building, which contains dining facilities, lounges, and meeting and recreation rooms.

DANA
RESIDENCE
CENTER

A second residence complex, named in honor of Mr. Charles A. Dana of Bridgeport, Conn., opened in September, 1967. The center includes Hughes Hall, a dormitory for 150 women, a dormitory for 146 men and Dana Commons, a student center, with dining facilities and offices for student organizations.

JEFFERSON
HALL

Jefferson Hall, opened in 1959, houses one of the University's dining halls, a snack bar, student lounges, a recreation room, and the University Bookstore.

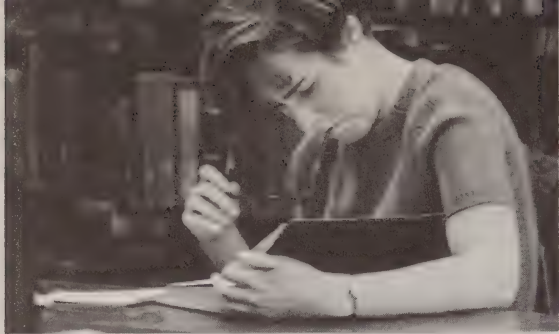
ADMINISTRATIVE
BUILDING

The Downing Street administrative building houses the offices of Admissions, the Deans, Registrar, Bursar, Treasurer, Business and Public Relations. The Philosophy Department also is located in this building.

CONFERENCE
CENTER

Near the main campus is the Conference Center, with comfortable rooms for university meetings and functions.





The Robert Hutchings Goddard Library

Tilton M. Barron, *Librarian*

Marion Henderson, *Reference Librarian*

Elizabeth Hassinger, *Catalog Librarian*

Thomas V. Mongeon, *Circulation Librarian*

The University's new Library contains over 270,000 volumes and some 50,000 maps and charts. The major part of the collection is centrally housed, and an open shelf system fosters free access to books and periodicals. Chemistry periodicals are available for reference at the Kraus Library in Jeppson Laboratory.

The collection reflects the history and growth of the University. The combined scholar's library of the early graduate school and the undergraduate library of Clark College have been developed through the years to serve the academic needs of the University. The richest holdings are in the fields in which graduate work has been offered for some years—biology, chemistry, economics, education, geography, government, history, international relations, mathematics, physics, psychology, and sociology. More characteristically undergraduate in content are the collections dealing with music, fine arts, language, literature, religion, and philosophy. The Library pays particular attention to major bibliographical and reference tools, and annually receives over 1,200 periodicals. The acquisition and exchange of material is coordinated with other libraries in the Worcester area.

The Robert Hutchings Goddard Library provides unusually fine quarters for the utilization of these collections. Completed late in 1968, the new building has a potential capacity of 600,000 volumes and accommodations for more than 1,000 readers, of which 65 per cent are individual study desks. Among its features are the Goddard collection and exhibit area; the Wilson Rare Book Room; special facilities for art books, record listening and microtext reading; student and faculty lounges; and an after-hours reading room.

The building is named in honor of, and as an international tribute to, Dr. Robert H. Goddard, Father of the Space Age, distinguished alumnus, and professor of physics at Clark from 1914 to 1942.

The University's Future

At a time when higher education is confronted with unprecedented challenges in meeting the nation's needs, Clark University faces the future with comprehensive, thoughtful plans and an ambitious program for their achievement. In establishing ten-year objectives for the University, trustees, faculty, alumni and friends have been aware both of Clark's unusual history and traditions, and the critical national need for expanded educational services and facilities. Reflecting these considerations, Clark's goal is to hold steadfast to its traditions as a university concerned with scholarship of the highest possible order, and to offer graduate work to and beyond the doctorate in selected fields of study. Too, the University aims to preserve—and enhance—the unusually close relationship which exists between undergraduate and graduate education at Clark, thus maintaining one of its most unique features: an intellectual atmosphere which combines the spirit of creative discovery found in the large university with the intimate, personal relationships which are found in the small liberal arts college. Finally, while continuing to foster the values of smallness in every possible way, the University is undertaking planned and limited expansion to an enrollment of 2200 students by 1972, the 85th anniversary of the granting of its charter.

THE ROBERT HUTCHINGS GODDARD LIBRARY





MASTER PLAN—CLARK'S CAMPUS OF TOMORROW

In pursuit of these goals, the trustees have established THE CLARK PROGRAM, a comprehensive, ten-year development effort whose objective is to secure nearly \$21 million in new resources by 1972. Of the total sought, \$8 million will be required to support endowed professorships, faculty salaries, scholarships and special programs to enrich the educational experience at Clark. The remaining \$12.8 million will be applied toward the realization of Clark's *Campus of Tomorrow*, a long range plan for campus development.

Since the commencement of THE CLARK PROGRAM in May, 1962, good progress has been made toward its goals. At the end of six years more than \$14 million in resources had been secured, and the University had been strengthened by an additional endowed chair, two handsome \$2.5 million residential centers, a new central heating plant, the Robert Hutchings Goddard Library, and a number of other significant additions to its physical and financial resources.

THE CLARK PROGRAM is the largest undertaking of its kind in the University's history—a program rooted in conviction about the importance of what higher education means at Clark, and pursued with confidence that success will be achieved.

BEQUESTS AND DEFERRED GIFTS TO THE UNIVERSITY

Bequests have always been, and will continue to be, an extremely important means of ensuring the continued growth and strengthening of independent educational institutions such as Clark University. For persons who wish to provide for the University in their estate plans, the following basic legal forms are presented with the suggestion that they be reviewed by an indi-



vidual's legal counsel. Other forms are available upon request to the Office of the President.

Unrestricted Bequest

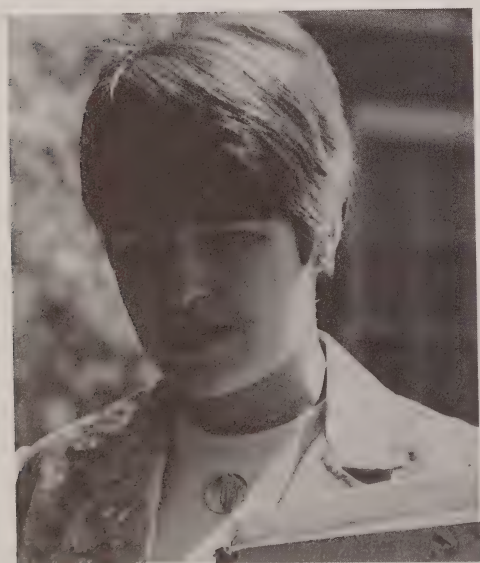
"I give and bequeath to Trustees of Clark University, a Massachusetts charitable corporation, located in Worcester, Massachusetts (here insert the amount of money and/or describe the personal property or real estate)."

Restricted Bequest

"I give, devise and bequeath to Trustees of Clark University, a Massachusetts charitable corporation, located in Worcester, Massachusetts (here describe the gift to be used or the income to be used) for the following purposes (here specify the purposes for which the gift or the income therefrom is to be used).

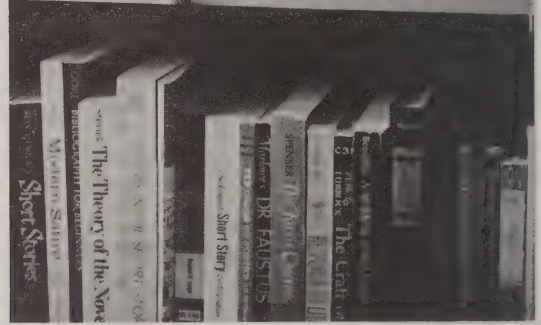
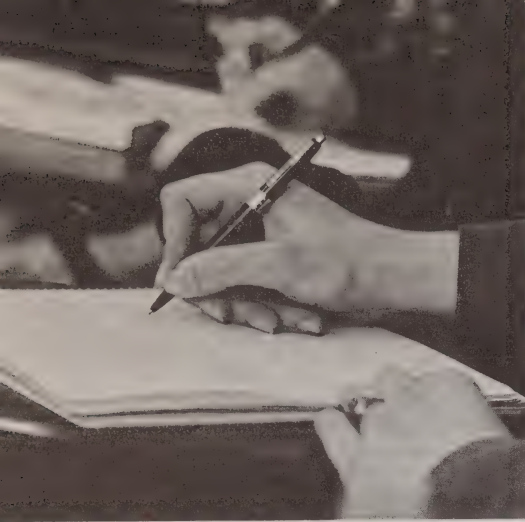
In addition to legacies, there are other methods of providing for the University in estate plans. Gift Annuities, Life Income Plans, and Trusts are available at Clark through its Deferred Gifts Program. Specific information may be obtained by writing to the Office of the President. The University will be glad to consult, on a strictly confidential basis, with individuals and their counselors about these other ways of enriching the University.

For purposes of making a gift by will to Clark, the University's legal corporate title is: TRUSTEES OF CLARK UNIVERSITY.



THE UNDERGRADUATE COLLEGE





The Academic Programs

LIBERAL ARTS

The liberal arts curriculum provides for breadth of knowledge and understanding together with the intellectual discipline resulting from concentration in a selected field. The Bachelor of Arts program at Clark possesses a large degree of flexibility permitting adaptation to a wide variety of individual interests.

PRINCIPLES OF LIBERAL EDUCATION

Liberal education seeks to develop human beings who have a sense of personal identity, who are equipped and motivated to realize their intellectual potentialities and who are able to contribute to their own welfare and the welfare of others. This often involves a lifetime of learning, but a liberal arts college in a university can and should make a significant contribution to the attainment of such goals.

To have a sense of identity is to understand oneself as an organism in the natural and physical world, as a product of a particular civilization or society and as a person caught up in all

the joys, sorrows and perplexities of the human condition. Naturally, no course or combination of courses can insure such understanding and there is no schooling that can guarantee wisdom, but there are courses in almost every field which can make a genuine contribution to this personal educational goal.

Self-realization or the actualization of one's potentialities depends in the first instance on the acquisition and improvement of fundamental skills of language, reasoning and communication. Without these skills, it is not possible either to expand one's intellectual horizons or to master a particular intellectual discipline, pursued for its own sake or for extrinsic professional or vocational reasons. Mastery of one's own language should be matched by competence in at least one other language, and to understand the processes of reasoning in many disciplines a knowledge of mathematics including the calculus is essential. Intellectual development and understanding also rest to a great extent on an appreciation of the various methods by which knowledge is acquired, theories and hypotheses are tested and judgments are evaluated. To gain this appreciation, a student should take courses which involve various modes of inquiry, e.g., the historical approach, the experimental method, logical, textual or linguistic criticism, systems analysis and intuitive insight. It will be difficult for a student to take such courses without at the same time familiarizing himself with important ideas in each of the traditional divisions of knowledge, the physical sciences, the social sciences and the humanities.

Communication of ideas and feelings is surely not the monopoly of language, literature and mathematics, and, therefore, one should also be familiar with the expression of ideas and feelings in music and the fine arts. It has been argued, indeed, that the arts provide an insight into "reality" that is just as valid as that provided by the sciences. In any event, one cannot realize one's potentialities for intellectual and aesthetic enjoyment without exploring one or more of these artistic areas.

To contribute to one's own welfare usually demands the choice of a vocation that is rewarding psychologically or financially or both. A liberal arts education does not become illiberal when it recognizes this fact and provides opportunities for intensive work in areas which may lead to vocational involvement or when it prepares students well for graduate and professional schools. But this emphasis on pre-professional training should

always be balanced by courses which emphasize the interrelationships of fields of knowledge and the values which undergird the whole intellectual enterprise and indeed all of human society.

To suggest a concern for the welfare of others naturally implies some value judgments that are inherent in liberal education. It is to assert that a liberally educated person will assume some responsibility in public and community affairs, and that he will contribute certain analytical abilities, specialized knowledge and mature judgment to the solution of the problems of society. To prepare for this role, a person should be familiar with some basic concepts in the social sciences and should have had some experience in problem solving and in making hard choices among alternative courses of action.

It should be re-emphasized that liberal learning is a life-time pursuit, but a student may take a giant step toward the goals of liberal education by a judicious and wide-ranging choice of courses in college. In the atmosphere of freedom which Clark University seeks to promote, this choice is left primarily to the student, who is urged to take advantage of the many opportunities offered by the University.

GROUPS

Course credit may be obtained at the undergraduate level in the following fields of instruction which, for administrative purposes, are known as "groups."

Group A. Science and Mathematics: Biology, chemistry, experimental psychology, geology, mathematics and physics.

Group B. Social Sciences: Economics, education, geography, government, history, international relations, philosophy, psychology and sociology.

Group C. Language and Literature: Greek, Latin, English, French, German, Spanish, Russian, and comparative literature.

Group D. Fine Arts: Art and music.

MAJORS

A student may major in biology, chemistry, classics, economics, English, geography, German, government, history, international relations, mathematics, music, philosophy, physics, psychology, sociology or Romance languages. A major in fine arts is offered through a cooperative program with the School of the Worcester Art Museum. Courses in education, geology and theatre art are

offered, but majors are not available. The courses in theatre art are offered through a program given in cooperation by Clark University, the College of the Holy Cross, and Assumption College.

GENERAL
EDUCATION

Many courses at Clark offer the student an opportunity to develop an intelligent and critical interest in fields of learning where he has no expectation of attaining professional competence. In choosing his program, the undergraduate is urged to supplement his major with courses of this character and with courses of an interdisciplinary nature.

INDUCTION

Freshmen and transfer students must attend an induction program held on the campus several days before the academic year begins. During the induction program, placement examinations and other tests are given. Students attend individual and group conferences in preparation to register for a program of studies.

ACADEMIC
ADVISING

At induction and during the freshman year, students are provided the opportunity to meet in groups and individually with faculty members in order to obtain advice regarding course program and related matters. A particular faculty advisor may be assigned upon request. Toward the end of the freshman year students are asked to indicate intended major and their preference for advisor from the major department, and advising responsibility at that point is assumed primarily by the various academic departments. Ample opportunities for academic and other advice are available for those students seeking it.

REGISTRATION

Each student is required to register for a specific program of courses before every semester. The student is given notice in advance of the dates on which registration is required. Failure to register within the announced period is penalized by a late registration fee.

ADVANCED
PLACEMENT

Placement in advanced courses is determined by individual performance on special departmental placement examinations or, in some instances, on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. College credit for certain courses completed in high school may also be granted toward the bachelor's degrees on the basis of the College Entrance Examination Board Advanced Placement Tests.

NORMAL
PROGRAMS

The undergraduate normally carries a full program of from 12 to 17 semester hours inclusive each semester. In addition, he must meet the requirement for physical education. In general, a course meets three times weekly. Laboratory periods are usually three hours long. Students should consult their faculty adviser or major department when questions of course or program selection arise. Permission to carry a reduced or expanded program must ordinarily be secured from the College Board.

UNDERGRADUATE
PROGRAMS

Freshmen may choose any course distinguished by the letter "F." Tentative selection of a major is required of A.B. degree candidates at the time of registration for the sophomore year.

Sophomores may elect any course designated by numbers beginning with the numeral 1, indicating the course is primarily for undergraduates. They are not admitted to courses designated by numbers beginning with the numeral 2, except by permission of the instructor and the department chairman concerned, to whom the student must present evidence of high class standing and/or adequate preparation.

Juniors and seniors may elect any courses designated by numbers beginning with 1 or 2, indicating courses which are primarily for undergraduates or for advanced undergraduates and graduate students. The selection by juniors and seniors of these courses is subject to any conditions stated in the course description.

Under special conditions and with the approval of the Chairman of College Board and the Dean of the Graduate School in each case, seniors who rank in the upper third of their class may be admitted to courses designated by numbers beginning with the numeral 3, indicating courses which are primarily for graduate students.

JANUARY
STUDY PERIOD

A three-week period immediately following the mid-year recess is set aside for special projects and independent study, both on and off the campus. Programs of extracurricular activities, including athletics, drama, music and lectures, continue as usual during the January Study Period.

READINGS OR
SPECIAL
PROJECTS
COURSES

Some departments offer readings or special projects courses which may be entered with the permission of the instructor concerned. No student, however, may register for more than eight semester hours of such courses during a given semester or for more than

twenty-four semester hours of such courses during his college career.

**ACCELERATED
PROGRAMS**

A student may earn the Bachelor's degree in less than four academic years through a combination of Advanced Placement credit, a larger than normal program of studies and attendance at summer schools.

**SUMMER SCHOOL
COURSES OTHER
THAN CLARK'S**

Credit toward a degree for study at a summer school other than the Clark Summer School must be approved by the Registrar no later than Registration Day of the following semester. Students are strongly advised to confer with the Registrar prior to taking summer school courses to assure acceptability of credit toward the Clark degree.

**EXPANDED
PROGRAMS**

A student whose grade point average for any semester is 2.3 or better may register for a program of more than 17 but no more than 20 semester hours for the following semester.

A senior whose graduation within the academic year depends on the completion of an expanded program during that year may register for more than 17 but no more than 20 semester hours if his grade point average for the preceding semester is 1.7 or better.

**INSTITUTIONAL
COOPERATION**

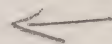
Worcester area colleges and universities are involved in a number of cooperative educational enterprises. Clark students may register for some courses at neighboring institutions with permission of the institutions involved. Courses offered elsewhere in theater art, linguistics, geology, Russian and sociology are listed in this catalog.

R.O.T.C.

Clark students may enroll in Reserve Officers' Training Course programs at either the College of the Holy Cross or Worcester Polytechnic Institute.

**WASHINGTON
SEMESTER
PROGRAM**

Clark participates in the Washington Semester program of the American University in Washington, D. C. Under the program, a small number of superior students may be nominated to attend the program, usually in the junior year, studying United States government in the nation's capital. Though any student may be interested in the program, the opportunity should be particularly attractive to students majoring in government, international relations, history, economics or sociology. A credit of 15 semester



hours is given for the program toward the Bachelor's degree at Clark. Inquiry and application should be made to the chairman of the Department of Government and International Relations.

JUNIOR YEAR
ABROAD

In cooperation with such organizations as The Experiment In International Living, The Institute of European Studies, the Jacob Hiatt Institute in Israel and several American colleges and universities, Clark offers its students the opportunity of spending all or a portion of their junior year abroad. These and other programs of foreign study involving academic credit must have prior approval of the College Board.

PARTIAL
PROGRAMS

Under special circumstances, students may be permitted to register for a semester program of less than 12 semester hours. Such students are designated as part-time students and are excused from the requirement in physical education.

SPECIAL
STUDENTS

Special students register for such programs as they agree upon in consultation with the instructors concerned. They are excused from the requirement in physical education.

PRE-
PROFESSIONAL
PROGRAMS

One function of the undergraduate college is to prepare students who intend to enter a professional school or take graduate study. Students entering Clark may gain this basic preparation through the selection of the appropriate major. A student planning a professional career should consult with his adviser as early as possible in his college career to best select an undergraduate program.

Pre-medical or pre-dental students can satisfy requirements for entrance into a medical or dental school by taking necessary basic courses in biology, chemistry and physics. Such students should consult with the Chairman of the Pre-Medical and Pre-Dental Advisory Committee. For students planning careers in teaching, Clark offers courses necessary for state certification. It also offers a graduate program in education. For information concerning teaching requirements, consult the Education Department section under the listing of "Departments and Courses."

Pre-law students are not limited to the selection of a particular major or a fixed group of studies; some attention to the social sciences is generally favored. Undergraduates planning to attend law schools are advised to seek a broad liberal arts education.

Requirements for a Bachelor's Degree

GENERAL REQUIREMENTS

Residence: Normally at least sixty semester hours of the total one hundred and twenty semester hours required for the Bachelor's degree must be taken at Clark University. Of these no fewer than thirty of the last sixty semester hours must be completed at Clark. Permission for a student to take all or part of his work during the senior year at another institution may be granted, by the College Board only, in exceptional circumstances, especially when an unusual educational opportunity is presented.

Course Requirements: All College regulations concerned with credit toward a degree are expressed in terms of semester hours. In undergraduate courses, a semester hour as a unit of credit normally implies one class meeting of approximately fifty minutes in duration or one laboratory exercise of two or three hours duration per week throughout one semester. One hundred and twenty semester hours at a satisfactory level of scholarship are required for the Bachelor's degree.

Physical Education: Two hours per week of physical education is required of freshmen and sophomores. A fee of \$50 will be charged to any student who has an *unexcused* failure in any semester in the two-year physical education requirement.

MAJOR REQUIREMENTS

Major: A departmental major consists of from forty to fifty semester hours chosen from courses designated by the department for the purpose. At least half but no more than three-quarters of these semester hours must be in the major subject; the remaining hours must be in related fields of study as designated by the department. No department may require a student to take more than fifty semester hours in the major and related fields but a student may take more than fifty semester hours if he meets the other requirements for graduation. A grade point average of at least 2.0 must be attained in at least forty semester hours of courses in the major and related fields.

Mathematics 12 is normally a freshman year requirement for all students intending to major in Group A—Science and Mathematics.

OTHER
REQUIREMENTS

A student must take and pass courses equaling at least 36 semester hours outside the Group (A, B or C-D) in which he is majoring or alternatively (at the direction of his major department) outside those major and related fields or courses designated for this purpose by his major department and approved by the Academic Council.

Academic Regulations

GRADES

Grades are reported to each student at the end of each semester. The grades are A—excellent; B—good; C—average; D—poor; F—failure, and P—pass. The modifying symbols, plus and minus, are used with each of these letter grades, except F and P, giving 13 levels of passing grades. A report of incomplete may be permitted only when sickness or some other unavoidable circumstance prevents the completion of a course.

A *grade point average* is determined for each student at the end of each semester by multiplying the credit in semester hours of each course in which the student is registered by a *grade point* or numerical equivalent of the letter grade received by the student and dividing the result by the total number of semester hours for which the student is registered. The grade points used for the calculation of averages are as follows:

A+=4.3	B+=3.3	C+=2.3	D+=1.3	F=0
A =4.0	B =3.0	C =2.0	D =1.0	
A-=3.7	B-=2.7	C-=1.7	D-=0.7	

A record of failure in a course is final and not subject to change on the basis of any subsequent performance of the student who is involved. Credit for a course in which a failure has been reported may be secured only by repeating the course and earning a passing grade.

A record of incomplete incurred in the first semester must be made up no later than the following April 1; if incurred in the second semester or summer term, it must be made up no later than the following October 15. If a course is not completed within the specified time, the record of incomplete is changed to one of technical failure.

PASS-NO RECORD	A student may at the time of final semester registration in no more than four semesters choose one course for which he will either receive a P or, in the event of failure, have no evidence of the course entered on his permanent record, provided that no such course may be used in partial fulfillment of major requirements, (and provided that the total semester hours so chosen do not exceed 16.) A department may with the approval of the Academic Council designate certain courses which may not be chosen by students on this basis.						
REPORTING GRADES TO OUTSIDE SOURCES	Unless a student indicates in writing to the Dean of Students that he wishes it not be done in his case, information concerning academic performance will be released upon request to high schools attended by the student, to scholarship sources, to prospective employers and to selective service boards.						
WITHDRAWAL FROM COURSES	<p>A student may, by presenting an appropriate withdrawal form to the Registrar, be allowed to withdraw from a course without a record of failure at any time during the first four weeks of classes, regardless of the grade he has thus far attained in that course, providing that, after withdrawal, he be carrying no fewer than twelve semester hours.</p> <p>At any time after the first four weeks of classes and up until two class-weeks before the beginning of the final examination period, the Chairman of the College Board may permit a student to withdraw from a course without a record of failure providing the student is not failing that course at the time of request and that after withdrawal he be carrying no fewer than twelve semester hours.</p>						
COURSE CHANGES	A student may register for a course without special permission anytime up to the end of the second week of classes. Between the second week and mid-semester he may enter with the permission of the instructor and advisor (without petition).						
ACADEMIC STANDARDS	Candidates for the Bachelor's degree must obtain a final cumulative average of at least 1.85 in all courses taken at Clark.						
CLASSIFICATION OF STUDENTS	<p>All students who have not been required to withdraw at the end of a given semester will be promoted if they have satisfactorily completed the following semester hours:</p> <table> <tr> <td>To the sophomore class</td><td>24 sem. hrs.</td></tr> <tr> <td>To the junior class</td><td>54 sem. hrs.</td></tr> <tr> <td>To the senior class</td><td>84 sem. hrs.</td></tr> </table>	To the sophomore class	24 sem. hrs.	To the junior class	54 sem. hrs.	To the senior class	84 sem. hrs.
To the sophomore class	24 sem. hrs.						
To the junior class	54 sem. hrs.						
To the senior class	84 sem. hrs.						

- PROBATION** Freshmen and Sophomores who receive a semester grade point average of less than 1.60, Juniors and Seniors who receive a semester grade point average of less than 1.70, and students who receive more than one failure in any semester will automatically be placed on probation.
- DISMISSAL** Students may be required to withdraw after two consecutive or three non-consecutive probationary-level semesters.
- EXAMINATIONS** Final examinations are regularly given at the end of each semester in most College courses. Approximately one week is set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, may result in a record of failure in the course. Other examinations and tests may be given at any time during the semester at the convenience of the instructors.
- CLASS ATTENDANCE** The College has no class attendance requirements. However, instructors have the prerogative of establishing such requirements for their own courses.
- LEAVES OF ABSENCE** A student who is in good standing may apply to the College Board for a leave of absence, after which he may return to the University without formal application for readmission.



Honors, Awards, and Prizes

ANNUAL HONORS

First honors and second honors are awarded at the end of each year to members of the freshman, sophomore and junior classes who have, in the judgment of the College Board, distinguished themselves by their scholarship during the year.

COURSE HONORS

The bachelor's degree may be awarded *cum laude*, *magna cum laude* and *summa cum laude* to students whose records, in the judgment of the College Board, warrant this distinction.

DEPARTMENTAL HONORS

A student may elect a program leading to a bachelor's degree with honors in a particular subject at the beginning of the junior year and, in some cases, at the beginning of the senior year. Under this plan, the department appoints an honors adviser who assists the student in planning a unified program of courses for the junior and/or senior years. The program may include a maximum of twenty-four semester hours in which the student works with a large measure of independence under the supervision of the adviser. In the senior year, the student must pass a comprehensive examination given by the department.

Students may apply in writing to their major department for permission to take honors work, not later than May 1 in the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work. In exceptional cases and in certain departments, application may be made and admission approved by the department concerned as late as the first two weeks of the senior year but only with consent of the College Board.

Admission to an honors program does not relieve the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any semester in which he has not maintained a standard satisfactory to the department in which he is doing honors work. If candidacy is terminated for any reason, the amount of credit to be allowed for honors courses will be determined by the College Board in consultation with the major department.

The department may recommend the student's graduation with honors, high honors or highest honors, the recommendation to occur at the conclusion of the honors program.



PHI BETA
KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in scholarship in programs which are clearly liberal in character. Although exact definition of the last phrase is difficult, and although there are diverse pathways to a liberal education, nevertheless it is generally recognized that a liberally educated person is characterized by genuine personal involvement in intellectual pursuits and by breadth of interest. Such a person should have an informed appreciation of the fine arts and of his own culture through its literature, and of a foreign culture as well. Furthermore, it is generally recognized that the rapid advances of the 20th Century in both the natural and social sciences demand of the liberally educated person an understanding of the philosophy, methods, history and important findings in these fields. In selecting candidates for membership, the Clark Chapter of Phi Beta Kappa will take into consideration the extent to which the

student has devoted himself to fulfilling these ideals of a liberal education.

OTHER
HONORARY
SOCIETIES

Omicron Delta Epsilon: National Honor Society in Economics.
Delta Phi Alpha: National Honor Society in German.
Gamma Theta Upsilon: National Honor Society in Geography.
Phi Sigma Tau: National Honor Society in Philosophy.
Sigma Pi Sigma: National Honor Society in Physics.
Psi Chi: National Honor Society in Psychology.

PRIZES AND
AWARDS

Homer Payson Little Award in Geology: Provided by a group of interested alumni, the award is presented each Spring to that student who has achieved the highest record in geology classes during the year. The award is named in honor of the late Dr. Little, professor of geology and Dean of Clark College from 1922 to 1954.

Prentiss Cheney Hoyt Poetry Prize: A prize of \$25 is awarded annually by the English Department for the best poem by an undergraduate. The prize money is received from a fund established by alumni as a memorial to Dr. Hoyt, a professor of English at Clark from 1909 to 1920.

Loring Holmes and Ruth Dodd Drama Contest: A prize of \$50 is awarded by the English Department to the student writing the best one-act play. Dr. Dodd was professor of English at Clark from 1910 to 1949 and was chairman of that department.

Physics Achievement Award: Each year, the student in Physics 11 who, in the opinion of the instructor, shows the best performance and improvement in the course work is given a copy of the *Handbook of Chemistry and Physics*, made available by the Chemical Rubber Publishing Company.

Chemistry Achievement Award: A copy of the *Handbook of Chemistry and Physics* is awarded each year to the student who ranks at the top of the class in Chemistry 11.

American Institute of Chemists Award: A medal is awarded by the Chemistry Department each year to a senior chemistry major who demonstrates a high potential for the advancement of chemistry.

Ahepa Greek Prize: A prize of \$25 is awarded each year to the best student in Elementary Greek. The prize is made available by the Worcester chapter, Order of Ahepa.

Tuition and Other Charges

GENERAL INFORMATION

Undergraduate tuition, fees and other charges for 1968-69 are listed below. Charges for the Evening College and the Summer School can be found in their respective catalogs. Tuition, fees and other charges for graduate students are listed under the catalog section on The Graduate School.

Tuition, board, dormitory charges and certain fees are due and payable at the beginning of each semester. These dates for 1968-69 are *September 9* for the first semester and *February 10* for the second semester. No one is permitted to register for any semester until all financial obligations have been satisfactorily arranged with the University. A penalty fee is levied for late registration and late payment of charges.

TUITION

Tuition for each semester is based on a normal program of from 12 to 18 semester hours inclusive. Students who enroll for more or less than the normal program are charged at the rate of \$83.33 a semester hour.

Special students are also charged at the rate of \$83.33 a semester hour.

CONSOLIDATED FEE

Beginning in September 1968, the University has merged a large number of special fees formerly charged separately for laboratories, matriculation, graduation, etc. into a single uniform consolidated fee of \$25.00 a semester.

REFUND

A student who withdraws during the first week of any semester is allowed a refund of 80 per cent on tuition; during the second week, 60 per cent; during the third week, 40 per cent; during the fourth week, 20 per cent; after the fourth week there is no refund. There is no refund on other charges, except board, when a student withdraws from the University.

When a student has left, but not withdrawn from the University on the advice of a doctor within the first four weeks of a semester, and a decision is made later that the student must withdraw, tuition refund is made retroactive to the date of the doctor's recommendation, based on the schedule described above.

BOARD All single undergraduates, with the exception of those living with their families and seniors living off campus, are assessed a board charge which allows them to take their meals at a University's dining hall.

**CONTINGENCY
DEPOSIT** All undergraduates are required to pay a \$25.00 deposit to cover minor charges, such as property damage, which may be incurred during the year. They are billed each year for whatever charges are incurred; the balances are refunded upon completion of their studies.

**DORMITORY
RESIDENCE
AND DEPOSIT** All single undergraduates, with the exception of seniors and those living with their families, ordinarily must live in University-operated dormitory facilities. When the number of students required to live in the dormitories exceeds the number of spaces available, as typically happens, some students will be allowed to live off-campus upon request. The specific students allowed to do so are determined on the basis of age, class status and financial need. Students, except seniors, allowed to live off-campus are still responsible for payment of board charges.

A dormitory deposit of \$50.00 is required each spring of upper-classmen to reserve a place in a dormitory. It is credited toward the dormitory charges. The deposit is forfeited if the student does not enroll for the specified semester.

**STUDENT
ACTIVITY FEE** A fee of \$30.00 per semester, levied and administered by the Student Council, is required of all undergraduates, including part-time students, but not special students. It pays for admission to and participation in a wide range of cultural and recreational activities.



HEALTH AND ACCIDENT INSURANCE	All students are expected to subscribe to the student insurance plan which gives year-round coverage for health and accidents, unless they are similarly protected by other insurance. A fee of \$30.00 is charged.
APPLICATION FEE	A fee of \$15.00 must accompany the application for admission to the College. It is not refundable.
ADMISSION DEPOSIT	A deposit of \$200.00 is required of applicants when they accept the University's offer of admission. It is credited toward charges for the first semester. The deposit is forfeited if the student does not enroll for the specified semester.
TUITION DEPOSIT	A deposit of \$200.00 is required of all students planning to return to the University for their sophomore, junior or senior years. It is payable by <i>July 1</i> , and is credited toward charges for the fall semester. The deposit is forfeited if the student does not enroll for the specified semester.
KEY DEPOSIT	Deposit for keys may be required of the student for entrance to buildings, laboratories, personal lockers or mail boxes.

SUMMARY OF TUITION AND OTHER CHARGES

TUITION	Full Program (12 to 18 semester hours)	\$1000.00 per semester
CONSOLIDATED FEE		\$ 25.00 per semester
BOARD		\$ 300.00 per semester
DORMITORY CHARGES	Room rent (single)	\$ 250.00 to \$ 287.50 per semester
	Room rent (double)	\$ 200.00 to \$ 237.50 per semester
ACTIVITIES FEE		\$ 30.00 per semester
OTHER FEES	Application (undergraduate)	\$ 15.00
	Health and Accident Insurance	\$ 30.00
	Late registration	\$ 10.00
	Late payment of charges	\$ 10.00
	Transcripts (no charge for first one)	\$ 1.00
DEPOSITS	Admission (Freshmen)	\$ 200.00
	Tuition (Upperclassmen)	\$ 200.00
	Dormitory	\$ 50.00
	Contingency (see page 39)	\$ 25.00



Student Services

DINING HALLS

Dining halls in Little Commons, Jefferson Hall, and Dana Center are operated for the convenience of students and staff of the University. Service is cafeteria style. Undergraduates, with the exception of those living with their families, and seniors who elect to live off-campus, are assessed a board charge, and are assigned at the beginning of each semester to a dining facility according to place of campus residence, and, whenever possible, according to their own wishes. Other members of the University community may eat at University dining halls on a semester basis or for single meals. The snack bars in Jefferson Hall and Dana Center are open to all members of the Clark community.

DORMITORIES

With the exceptions noted on page 39, all resident undergraduates must live in University operated dormitory facilities. Rooms are reserved on receipt of the dormitory deposit fee which is later applied to room rental charges.

INFIRMARY

The University Infirmary provides for minor medical services to all students and temporary in-patient care for resident students. A full-time nurse and a part-time physician are in attendance. Other physicians, other health specialists, and hospitals are available in Worcester.

HEALTH AND
ACCIDENT
INSURANCE

Subscription to a low-cost health and accident insurance plan covering ordinary medical expenses not covered by the University is urged of all students unless they are similarly protected by other insurance.

PSYCHOLOGICAL
SERVICES
CENTER

A psychological service center on campus provides testing and counseling service to students who wish help in academic or personal adjustment. If desired, other more appropriate University or community resources can be recommended to the student. The staff includes the Center director, Dr. Roger Bibace, and other clinical psychologists in the Department of Psychology and consultants in psychiatry, psychiatric social work and clinical psychology.

STUDENT
COUNSELING
CENTER

Individual counseling on problems of educational and vocational planning and adjustment to college life is available through the Student Counseling Center. The service supplements the advisory services of professors and deans. The office assists the student in job exploration, informing him of available positions and arranging interviews with potential employers. Part-time employment opportunities are listed for students who wish to work during their college career. The center is directed by Dr. Arthur M. Kroll, assistant professor of education.



Student Life

The Clark community is a liberal environment in which students are regarded as citizens fully participating in rights and liberties and, therefore, expected to take primary responsibility for the social as well as the intellectual aspects of their lives. Making an assumption of maturity about students, the University operates with a minimum of social regulations.

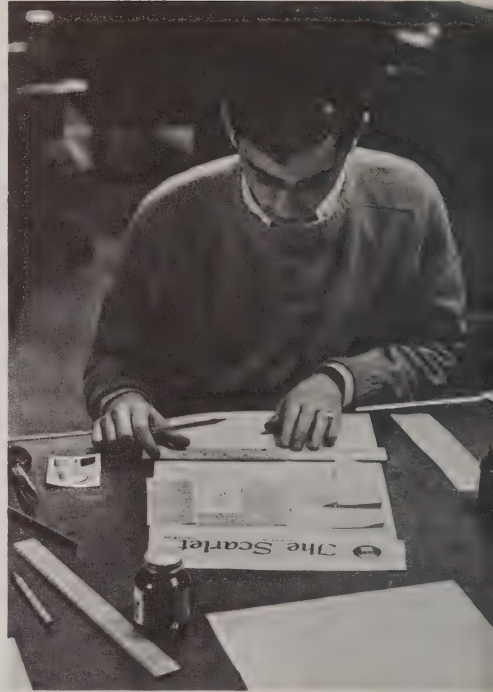
Clark is a college for intellectually-committed students who are willing and able to carry the responsibilities that accompany living and working in an atmosphere of freedom and self-determination.

STUDENT GOVERNMENT AND PARTICIPATION IN INSTITU- TIONAL DECISION MAKING

The Student Council, elected by the student body each spring, is an active influence in the social, cultural and political activities of the campus. It is concerned with general campus governance, and disburses the funds raised by the student activities fee, which it levies, among the various student organizations.

Students are represented on several important University committees, and have ready, less formal daily access to faculty and administration which enables them to play an important role in the making of policy and the effecting of changes.





COMMUNICA-
TIONS

Students publish *Scarlet*, a weekly newspaper; *Helicon*, a literary magazine; *Fotch*, a humor magazine; and *Pasticcio*, a year-book. A campus radio station, WCUW, broadcasts approximately 70 hours per week.

CULTURAL
EVENTS AND
ACTIVITIES

Noted scholars, musicians, artists, performing groups and public figures, sponsored by the University and various campus groups, are brought to Clark for lectures, performances and concerts. Among those heard in 1967-68 were: Daniel Bell, Barnaby Keeney, Senator George S. McGovern, Jerome Bruner, Jack Vaughn, Henry Steele Commager, Edwin O. Reischauer, Paul Winter Jazz Ensemble, Jim Kueskin Jug Band, James Brown Review, Jefferson Airplane, John Williams and Jimi Hendrix.

Campus musical groups open to student participation include the University Chorale, Instrumental Ensemble, Madrigal Singers and an opera group.

The Clark University Players Society presents dramatic offerings with student casts, as does an experimental theater group.

The Clark Film Society, and other campus groups, present foreign and domestic films, both conventional and experimental in nature. Student-produced experimental films are also occasionally presented.

The city of Worcester also offers many cultural opportunities, such as a Musical Festival in the fall featuring the Detroit Symphony Orchestra, and such as the Community Concert Series. The Worcester Art Museum, world famous for its outstanding collections and art school, sponsors numerous lectures, movies and concerts. Neighboring academic institutions also sponsor programs which are available to members of the Clark community.

SOCIAL
ACTIVITIES
AND
ORGANIZATIONS

Dances and concerts are sponsored by the student Social Affairs Board. Fall and Winter Weekends are two major social events; smaller dances and parties are provided by four fraternities, all of which own houses near the campus. An on-campus, student run Coffee House in the Dana Commons is a popular gathering place and sponsors a variety of programs.

CAMPUS
ORGANIZATIONS

There are student organizations affiliated with academic departments, such as the Physics, Psychology and German clubs, and others related to hobbies or interests, such as the Chess Club, the Debate Society, Pre-Law Club, Sports Car Club, and Photography Club.

Religious organizations include the Christian Fellowship Organization, Clark Christian Association, the Newman Club and Hillel Counselorship.

Scarlet Key, an honorary service society open to sophomore men and women, organizes tours for campus visitors and in other ways aids in the hosting of University guests and the introduction of new students to the campus. It has recently begun to develop a tutoring service for Clark students.

Gryphon and Pleiades, the men's and women's senior honorary societies, play important roles in innovating new programs and in maintaining many of the College's traditions.

SOCIAL ACTION
ACTIVITIES

Many Clark students are concerned about issues of war and peace, civil rights and poverty. Frequently they participate in national programs and in community action groups and initiate campus organizations, lectures, discussions and debates to confront these critical issues.



Physical Education and Athletics

PHYSICAL EDUCATION

Two hours per week of physical education is required of freshmen and sophomores. Students are excused from this requirement only on the recommendation of the medical director. Programs are designed to stimulate and encourage students to wider participation in physical activities to promote health and mental efficiency and lead to continuing participation throughout life.

MEN'S PROGRAMS

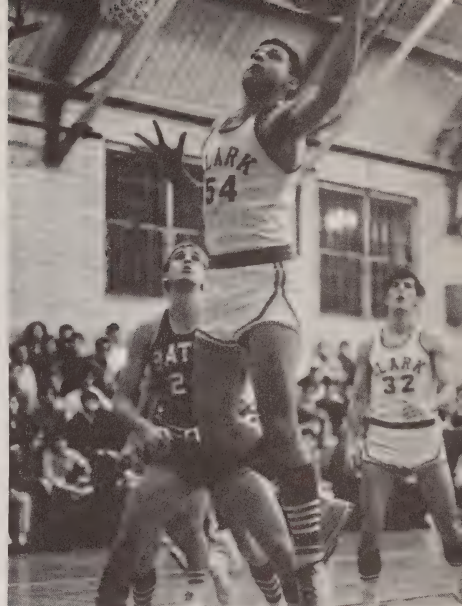
Men may choose activities from the following areas:

1. *Intercollegiate Athletics*

For men with a reasonably high level of skill and a well defined and strong interest in athletic competition, intercollegiate schedules at the Varsity and Freshman levels are arranged in baseball, basketball, golf, eight-oared shells, soccer, tennis, track and cross-country.

2. *Intramural Athletics*

The opportunity to gain some of the benefits of participation in competitive athletics is offered to all students through organized intramural competition in touch football, basketball, volleyball, tennis, handball, table tennis, paddle rackets, and softball.



3. Physical Education Classes

Instruction and practice is given in a wide variety of activities including work with a number of team games, individual and dual sports, apparatus, and calisthenics.

WOMEN'S PROGRAMS

Students may participate in archery, badminton, basketball, fencing, field hockey, golf, horseback riding, tennis, softball, volleyball and in several dance activities, including folk, square and modern dancing. Women use their own gymnasium for practice but have the use of the Alumni Gymnasium for games with outside organizations.

ELIGIBILITY

Students carrying less than a full program of studies are ineligible to participate in organized extracurricular competitive athletics unless the reduced program permits graduation at the end of the year in which the program is carried. A student transferring with advanced standing from another four-year college is ineligible for one calendar year from the date of registration at Clark to participate in any varsity sport. Special students are not normally entitled to participate in competitive intercollegiate sports.

ASSOCIATION MEMBERSHIPS

Clark University is a member of the National Collegiate Athletic Association, the New England College Athletic Conference and numerous sports associations.

Admission

FRESHMAN ADMISSION

Clark University welcomes applications for admission from men and women. Selection is on a competitive basis, and is based primarily on academic promise as indicated in secondary school performance and class standing, teacher recommendations; and Scholastic Aptitude Test scores, and secondarily on such non-academic factors as breadth of interests, activities, and abilities.

APPLICATIONS

Candidates for admission are encouraged to submit their applications as early as possible during the first semester of their final year of secondary school education. All applications must be received by *March 1*. *Early decision* candidates must file complete applications by *November 1*. An application fee of \$15.00, non-refundable, must accompany each application.

ENTRANCE REQUIREMENTS

General: The completion of a four-year high school program or its equivalent, including a minimum of 16 acceptable units of credit, is required for admission to the freshman class. (The term "unit" means a course of study in one subject taken through a school year.) Official records from all secondary schools attended must be submitted.



Subject-Matter Requirements: For admission to the freshman class the subject-matter requirements are as follows:

Required Subjects, 8 units

English	4 units
Mathematics (algebra and geometry) (Applicants planning to specialize in science or mathematics are advised to present three or more units of mathematics.)	2 units
Foreign Language (in a single language)	2 units

Electives, 5 or more units

Social Studies (history, government, civics, etc.)	1 to 4 units
Natural Sciences (biology, chemistry, physics, etc.)	1 to 4 units
Mathematics	1 to 2 units
Foreign Language (A single unit in a beginning foreign language is not acceptable.)	1 to 4 units

Other Electives, not more than 4 units

Subjects recognized by the applicant's secondary school in its regular program, at the discretion of the Admissions Committee.

Entrance Examination Requirements: All applicants must arrange during their senior year to take and submit the results of the Scholastic Aptitude Test, as administered by the College Entrance Examination Board, prior to final consideration by the Admissions Committee. The December administration of this test is preferred.

To assist the College in determining proper placement in courses, applicants are required to submit the results of three Achievements Tests of the College Entrance Examination Board including the senior year English Composition Achievement, which is required of all applicants. The remaining two tests are his free choice, unless a student is taking a foreign language during the final year of secondary education and plans to continue it upon entrance to Clark—in which case the Achievement in that language must be submitted.

Senior year Achievement Tests are preferred. However, Achievements taken at the end of a terminal course of study are accepted.



Further information concerning these testing programs may be obtained from the applicant's secondary school guidance counselor, or from the College Entrance Examination Board. The College Entrance Examination Board may be addressed in the East at Post Office Box 592, Princeton, New Jersey; in the Far West at Post Office Box 9896, Los Feliz Station, Los Angeles 27, California.

Tours and Interviews: Personal interviews are available to all prospective students who wish them; however, they are not required. Candidates for admission are encouraged to schedule a campus tour. Students planning to visit the campus are asked to write or call the Admissions Office for information concerning available times for tours and interviews.

BASIC
FRESHMEN
EXPENSES

Basic expenses in the Freshmen year at Clark are approximately \$3110 to \$3285, as follows:

Tuition		\$2000
Board		600
Room		\$400-575
Fees		110
Comprehensive	\$50.00	
Activities	\$60.00	
		<hr/>
		\$3110-3285

A schedule of all University undergraduate charges appears on page 40.

NOTIFICATION OF ADMISSION AND DEPOSIT Time of notification of admission to the incoming freshman class is at the discretion of the Admissions Committee, and will normally begin on or about April 10. Students who have applied for *Early Decision* will be notified of the Committee's decision on or about December 1.

Upon receipt of a formal offer of admission a student will be required to indicate acceptance of the offer by making an admission deposit of \$200, non-refundable, to reserve a place within the incoming class. This deposit will be credited towards the charges for the first semester.

HOUSING ARRANGEMENTS All single freshmen not living with their families must live in residence within University operated dormitory facilities. Rooms are assigned during the summer prior to the arrival of the freshman class. Inquiries concerning living arrangements should be sent to the Office of the Dean of Students.

TRANSFER APPLICANTS Clark University will consider applicants for transfer from four-year colleges and universities, and two-year colleges.

TRANSFER REQUIREMENTS All applicants for admission under the transfer program are required to submit evidence of honorable dismissal, complete transcripts of all previous academic records, including the results of all College Entrance Examination Board tests, and such other information as the Admissions Committee may request. An on-campus interview is recommended.

TRANSFER CREDIT Credit is normally given for courses previously taken at accredited colleges or universities if these courses are comparable to those offered within the Clark University curriculum. Credit for courses previously taken at non-accredited colleges is granted only on a provisional basis to be evaluated upon successful completion of two semesters of work at Clark with a cumulative average of 1.7. No credit is given for any course completed with a grade lower than C-minus.

Evaluation of credits for college courses completed elsewhere is made at the time of a student's first registration at Clark and is used in planning his course program and in classifying him provisionally as a freshman, sophomore or junior.

A graduate of the three-year course of the School of the Worcester Art Museum may be admitted as a candidate for the



degree of Bachelor of Arts with the rank of junior in the College. In such cases the usual admission requirements must be met and the general subject-matter requirements for the degree must be satisfied.

FOREIGN STUDENTS

While Clark welcomes applications from foreign students, it is unable to provide financial aid to cover the major portion of a foreign student's educational expenses. Each foreign student accepted for admission must have medical insurance, preferably that available from the Institute of International Education.

Applications from foreign students must be submitted by April 10. Foreign students whose native tongue is not English must be able to satisfy the University requirements for proficiency in the English language.

SPECIAL STUDENTS AND AUDITORS

Persons who are not prospective degree candidates, who may wish to take advantage of the opportunities for study provided by the University and who give satisfactory evidence of adequate preparation for the work which they wish to undertake, may

apply for admission under the status of Special Student. Inquiries concerning this category of student should be addressed to the Office of Admissions.

At the discretion of the administrative officers of the University, Auditors, registered for attendance but not for credit, may be admitted. They are required to pay the regular tuition rates and the matriculation fee, but are not enrolled as students.

SUMMER SCHOOL AND EVENING COLLEGE Persons who may wish to be candidates for a degree from or who may wish to take advantage of the opportunities for study provided by the Summer School or The Evening College are invited to send inquiries concerning admission, programs available, or other questions to the Office of the Director of The Evening College and Summer School, Clark University.

WITHDRAWAL The University reserves the right to require the withdrawal of a student whose academic performance or conduct fails to meet required standards.



Financial Assistance

GENERAL INFORMATION

Scholarships, grants and loans are provided by the University from endowed and special funds, as well as from various public and private sources.

SCHOLARSHIPS

Scholarship aid is awarded on the basis of financial need and ability. Jonas Clark Scholarships are awarded for four years contingent upon continued financial need (as evidenced by the Renewal Parents' Confidential Statement) and academic achievement. All scholarships (with the exception of freshman scholarships) are reviewed each semester for academic achievement. Upperclassmen with satisfactory academic records may apply for financial aid at the beginning of any semester. To do so, they must submit the Renewal Parents' Confidential Statement, which may be obtained from the Financial Aid Office of the University. Transfer students may apply for financial aid for their first semester of residence.

Incoming freshmen applying for financial assistance do so through the College Scholarship Service, Box 176, Princeton, New Jersey or, for the Far West, Box 27896, Los Angeles 27, California. The service provides the University with an independent analysis of the applicant's financial needs. The application (Parents' Confidential Statement) may be obtained at the student's secondary school or from the College Scholarship Service and should be submitted to the College Scholarship Service at the same time that the student applies for admission. In order to receive financial aid consideration at Clark the Parents' Confidential Statement must be submitted prior to *February 1*. No other financial aid application is necessary. Scholarship applicants are notified about financial aid awards shortly after they receive notification of acceptance.

Upperclassmen must reapply annually for financial aid by submitting the Renewal Parents' Confidential Statement, which may be obtained from the Financial Aid Office of the University.

Financial assistance awards may fluctuate from year to year as a student's need varies.

GRANTS

The Federal Educational Opportunity Grants are part of a new Federal program of assistance to college students. They are

grants, not loans, and are renewable on a yearly basis. The grants are specifically set aside for students from low income families.

LOANS

Students who find it necessary to borrow money to continue their education may do so through various sources:

The National Defense Act Student Loan Program provides funds for long-term loans which bear no interest until a student has completed full-time study. Normally a person borrowing from these funds will repay the amount over a ten-year period. Graduates who enter public or private school teaching at the elementary or secondary level are eligible to have up to 50 per cent of their loan excused if they remain in teaching for a five-year period. National Defense Student Loans are granted on the basis of financial need and available funds. All National Defense Loan commitments are made contingent on Congressional appropriation of funds annually for this program.

Guaranteed Loan Program: Under Title IV of the Higher Education Act of 1965, a loan program designed primarily for middle income families has been created. Undergraduates may borrow up to \$1,000 yearly; graduate students up to \$1,500. Students whose families have adjusted incomes of \$15,000 or under will have a portion of the interest paid by the Government. Since the program is not completely operative in all states at this time, it would be advisable for students interested in this program to contact their local banks, who administer this program.

Other Loan Programs: Commercial deferred or extended payment plans such as various State Loan Programs, and private tuition payment plans also are available and should be carefully considered by the applicant.

PART-TIME EMPLOYMENT

A limited amount of part-time employment is available in various offices and departments of the University, and in the Worcester community.

WORK-STUDY PROGRAM

The University actively participates in the College Work-Study Program (Title I, Part C) under the Economic Opportunity Act of 1964. Qualified students from low-income families may obtain further information about this program from the Financial Aid Office of the University.



Further details on all forms of financial aid at the University may be obtained by writing to the Financial Aid Officer in care of the Admissions Office.

AUTOMOBILES

Students receiving financial aid are expected not to maintain or operate motor vehicles while in attendance at the College.

SCHOLARSHIP FUNDS

The following scholarships are currently available from University funds for undergraduate students.

The Reginald Bryant Allen Fund: awarded annually to a deserving student majoring in mathematics.

The Alumni Group Scholarship: is awarded to a freshman from a fund established by the trustees and the first three classes to graduate from Clark College, '05, '06 and '07.

The Worcester Art Museum Scholarships: available to Clark students enrolled in the affiliated School of the Worcester Art Museum as Fine Arts majors.

The B'nai B'rith Scholarship: provided by the Worcester Chapter, Order of B'nai B'rith, primarily but not exclusively for Jewish students.

The Gertrude and William Brodie Award: established in 1966 by a bequest of William Brodie, '25.

The Charles W. and Annie L. Bruninghaus Fund: established in 1957.

The Charles T. Bumer Memorial Scholarships: up to four full tuition scholarships, one of which also provides room and board, are awarded annually to outstanding freshmen applicants;

named in honor of the late Dr. Bumer, professor of mathematics at Clark from 1948 to 1960 and chairman of that department.

The Jonas G. Clark Scholarships: established by the trustees.

The Clark University Faculty Women's Club Scholarships: are available to either men or women, who rank high in intellectual and personal qualities.

The Albert C. Erickson Scholarship: established by the Tupper Foundation to honor an outstanding Clark student and teacher whose death in 1936 terminated a brilliant career in mathematical physics, this scholarship is awarded annually to an undergraduate, normally near the end of his junior year, who has done outstanding work in physics and mathematics and who shows unusual promise in these fields.

The A. D. R. Fraser Scholarship: established in 1964 by the Directors of the Herbert T. Dyett Foundation of Rome, New York in honor of Mr. A. D. R. Fraser '22, a trustee of the University, this scholarship is awarded to a deserving student at Clark from the city of Rome, New York, or lacking a qualified candidate from Rome, from Oneida County, New York.

The Aaron Fuchs Memorial Scholarship Fund: given by Mrs. Celia Fuchs in memory of her husband and in honor of her sons, Lawrence, '44, and Jerome, '53; for non-residents of Worcester or Worcester County.

The Bertram L. and Bessie T. Handleman Fund: established by Chester Handleman, A.B. '41, A.M. '61, in honor of his parents; for students in the Department of History, Government and International Relations.

The High School Basketball Tournament Scholarship: from receipts of the High School Basketball Tournament held annually at Clark; for male undergraduates from Worcester County.

The Gertrude & Eva Hillman Scholarship: established in the memory of the sister and mother of Archibald M. Hillman.

The Ellis-Hubley Competitive Scholarships: these competitive scholarships are restricted to male residents of Worcester or neighboring towns who have graduated from secondary schools in those areas. Full tuition plus a stipend is awarded annually

without regard to financial need. Up to three other full tuition scholarships are awarded annually to runner-up applicants; awards are made from funds bequeathed in memory of Gordon A. Hubley, Clark '10, and of Theodore T. and Mary G. Ellis.

The M. Hazel Hughes Scholarship: awarded to an outstanding freshman woman whose record of achievements both in and out of the classroom are of the highest caliber.

The Levi Knowlton Fund: by bequest of Mary H. Nixon in honor of her father, Levi Knowlton.

The Homer Payson Little Scholarship in Geology: established in 1965 by an anonymous donor in appreciation of the development of the Department of Geology; for a student who has demonstrated scholarly achievement in Geology.

The Livermore and Ambulance Scholarship: provided by citizens of Worcester in honor of Charles Randall Livermore, first Clark man to fall in battle in World War I, and of his companions in the Clark Unit of Ambulance Drivers; for male students who are residents of Worcester County.

The National Council of Jewish Women Scholarship: provided by Worcester section, National Council of Jewish Women, for a Jewish woman student who resides in Worcester County.

The Alice Friend Newton Memorial Scholarship: for an upper-class woman student whose major is psychology.

The Abraham Persky Scholarship Fund: unrestricted.

Pleiades Scholarship: awarded annually to a woman student on the basis of active citizenship, scholarship and financial need from funds raised by Pleiades, senior women's honorary society.

The Charles B. Randolph Fund: for male students, preferably majoring in a foreign language.

The Helen Brewster Randolph Memorial Scholarship: established by the late Professor Charles B. Randolph in memory of his mother; for male college students.

The Jennie L. Richardson Scholarship: was established by bequest of Carlton E. Richardson, Clark '08, as a memorial to his mother; for female Protestant students.

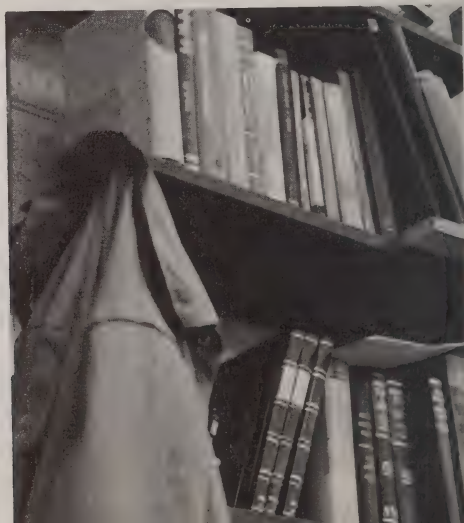
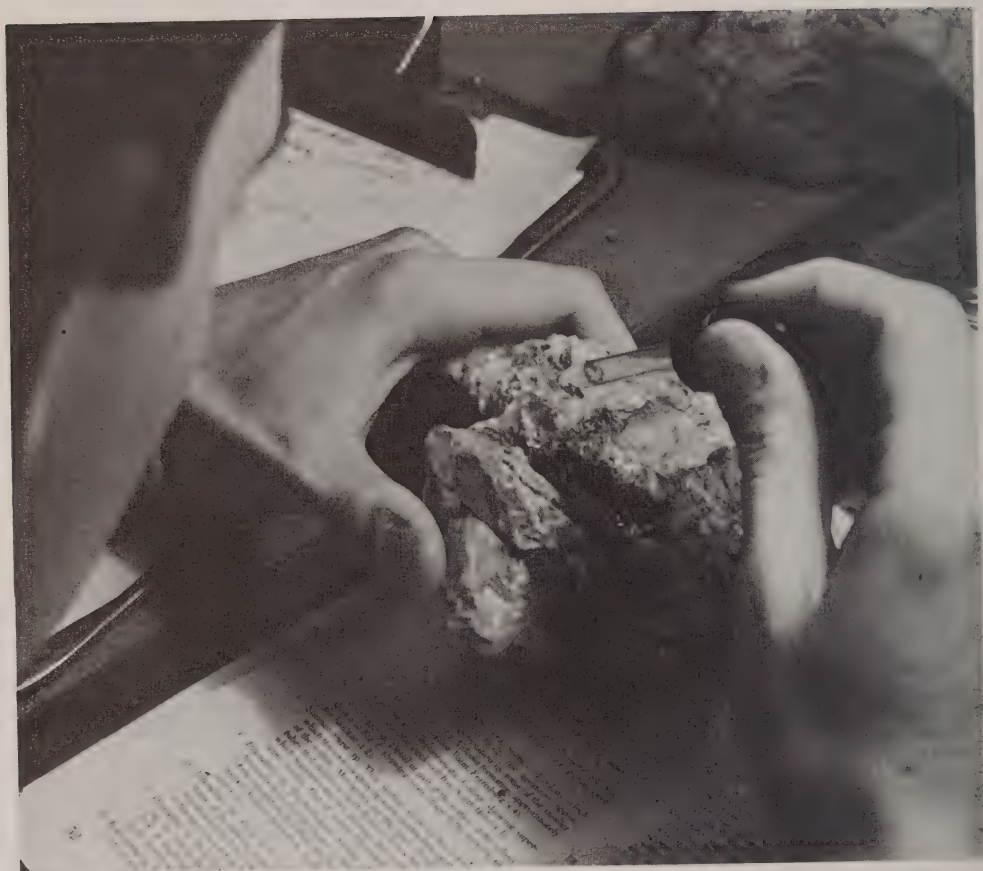
The William Richardson Scholarship: established by bequest of Carlton E. Richardson, Clark '08, as a memorial to his father; preferably for male Protestant students.

The Sanford Memorial Scholarship: established by alumni in honor of Edmund C. Sanford, president of Clark College from 1909 to 1920; for a male senior undergraduate.

The Whitman Scholarship: named in honor of Ernest R. Whitman, former athletic director at Clark, this scholarship offers full tuition, plus a yearly stipend of \$300 if the recipient is a resident student, and is awarded to freshmen male students whose qualities of leadership in and out of the classroom are outstanding.

The Henry A. Willis Scholarships: for male students from Fitchburg, Mass., and vicinity. In the absence of suitable candidates from this community, grants may be made to others.







THE GRADUATE SCHOOL

THE GRADUATE SCHOOL

GENERAL INFORMATION

Clark University was initially established as one of America's first institutions dedicated exclusively to graduate study and research. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years. Under the administration of the Graduate Board, Clark offers programs leading to master's and doctor's degrees to qualified holders of a bachelor's degree or its equivalent of attainment.

Master of Arts degrees are offered in the fields of biology, biomedical engineering (in cooperation with Worcester Polytechnic Institute), chemical physics, chemistry, economics, English, education, geography, government, history, international relations, mathematics, physics, psychology and sociology. A Master of Business Administration degree is offered through the Evening College of the University, and is described in the catalog section on the "Evening College."

Doctor of Philosophy degrees are offered in biology, chemistry, chemical-physics, economics, geography, history, international relations, mathematics, physics and psychology. A Doctor of Education degree is offered by the Department of Education.

Post-doctoral training is conducted in geography, psychology and the sciences. Inquiries should be addressed to the chairman of the department concerned.

Departments which do not at present accept candidates for graduate degrees may offer courses which are suitable for inclusion in a program of graduate study.

Scholarships and fellowships are listed at the end of this section. Additional information concerning departments and their offerings will be found in the section entitled "Departments and Courses."

INQUIRIES

Inquiries by students in American institutions concerning specific programs of graduate work should be addressed to the chairman of the department concerned. Inquiries by foreign students should be addressed to the Dean of the Graduate School.

ADMISSION TO THE GRADUATE SCHOOL

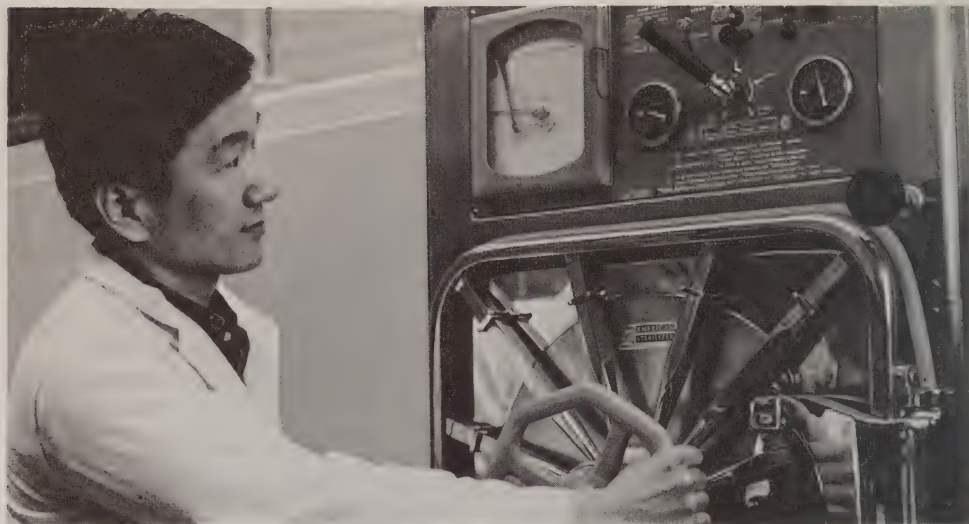
Admission to the Graduate School may be granted only by the Graduate Board on the recommendation of a department of the University. Admission to the school does not imply admission to candidacy for a degree.

Application: A prospective applicant from an American institution should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with an application form which must be accompanied by the \$10 application fee. These should be returned to the chairman of the department. In addition, the applicant should arrange to have an official transcript of his undergraduate, and any subsequent work, and at least three letters of recommendation from persons who are competent to judge his qualifications for graduate work sent directly to the chairman of the department concerned.

Departments may request the submission of additional material, and some require a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, New Jersey. All applicants are urged to take, and to submit the results of the Graduate Record Examination verbal, quantitative and advanced tests.

A foreign student, if encouraged by the Dean to make formal application, should provide a certified English translation of his official record (if not in English), evidence of English proficiency, preferably by his score on TOEFL (administered by the Educa-





tional Testing Service, Princeton, New Jersey), at least two letters of recommendations and a statement concerning his financial resources, or agency support.

Applications for both admission and for financial aid should be completed not later than *February 20* if the applicant intends to begin his studies in the following September. Applications may be submitted, however, throughout the year and are periodically considered by the Graduate Board.

Admission: Admission to the Graduate School is granted for entry only at a specified time and lapses if the student fails to enter at that time. Admission as special or part-time graduate students may be granted to qualified applicants who do not wish to work for a degree or who cannot devote full time to study.

If a student, when admitted, was a candidate for a degree elsewhere, he must arrange upon receipt of the degree to have a supplementary transcript, including a notation of the degree conferred, sent directly to the Dean of the Graduate School.

MASTER
OF ARTS

Residence: An Academic year (*twenty-four semester hours*) of study in residence is a minimum requirement for a master's degree. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty.

Foreign Language: A reading knowledge of a foreign language, usually French or German, may be required of candidates for the degree of master of arts at the discretion of the major department.

Candidacy: Application for admission to candidacy for a master's degree should be filed with the Dean of the Graduate School not later than the first week of the last full semester which the student expects to spend in residence as a candidate for this degree.

Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University and obtained the written endorsement of his major department.

Candidacy for the degree of Master of Arts is valid through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board.

Course and Examination Requirements: Each student must meet a minimum course requirement of 30 semester hours, and his program must be approved by the chairman of the department. One of his courses, normally three to six semester hours, may be a research course devoted to the preparation of his thesis. Credit for a maximum of six semester hours of course work at another institution may be approved by the Graduate Board upon the recommendation of the department.

Each candidate must make a satisfactory record in such written examinations as may be required by the major department and in a final oral examination by a committee of three or more, two of whom must be members of the Graduate Board.

Thesis: The thesis is written on a topic in the field of the student's special interest under the supervision of a member of his major department. The ribbon copy of the thesis, a précis approved by the supervising instructor, and an academic history must be deposited in the Registrar's office not later than three weeks before the date of the commencement at which the degree is to be conferred. At least one additional copy of the thesis and the précis must be delivered to the major department which may require more than one copy. The précis may not exceed 75

words in length. The title page, précis and academic history forms are obtainable from the Graduate School Office. The ribbon copy of the thesis must be typed on prescribed paper, marginally ruled in red and obtainable at the University Bookstore. For directions concerning the format of the thesis, see "The Master's Thesis" issued by the Graduate School Office with its notification of admission to candidacy.

The thesis is deposited by the Registrar in the University Library. The précis is printed by the University in an annual publication, *Dissertations and Theses*.

Alternative Program: A candidate for the degree of Master of Arts may be recommended for the degree without a thesis when he has passed the preliminary doctoral examination.

Diploma-Publication Fee: This fee for the Master of Arts degree is \$25.00. It covers the cost of the diploma and publication of the précis in the booklet *Dissertation and Theses*. It is payable when the thesis is deposited with the Registrar and replaces the fee formerly paid at the time of admission to candidacy.

MASTER OF
ARTS IN
EDUCATION

The residency, candidacy, course, examination, and diploma-publication fee requirements are the same as those listed for the degree of Master of Arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to (1) prepare a thesis as required for the M.A. degree; or (2) elect two additional semester courses (six semester hours); or (3) elect a research-seminar, three semester hours, in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of Master of Arts in Education may be found in the catalog section, "Departments and Courses," listed under the Department of Education.

MASTER OF
BUSINESS
ADMINISTRATION

This degree is offered through the Division of Business Administration. For further information, see the catalog section on the "Division of Business Administration."

DOCTOR OF
EDUCATION

The program leading to the degree of Doctor of Education emphasizes educational psychology, guidance and counseling. The

requirements for this degree closely parallel those for the degree of Doctor of Philosophy (see below). Applicants for admission to the program are required to submit results of the Graduate Record Examination. Foreign students may be excused from this admission requirement.

DOCTOR OF
PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy.

Residence: The minimum requirement is one year of full-time study (not less than 24 semester hours), or its equivalent in part-time work, in residence which is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty. If the degree of Master of Arts has been earned at Clark, this requirement is an addition to the residence requirement for that degree.

Foreign Language: A prospective candidate must pass an examination in the reading of a modern foreign language to be chosen at the discretion of his department from the following: French, German, Russian, Spanish. The Educational Testing Service Foreign Language Tests are used. The language examination should be taken as soon as possible, but must be passed at the latest before filing application for admission to candidacy.

Each graduate department may make such additional language or related requirements as the student's field of research may demand, and must report such requirements in each case to the Dean of the Graduate School.

Preliminary Examination: Upon completion of preparation in his fields of study a prospective candidate takes a preliminary examination set by his major department. This examination may be written or oral, or a combination of both. The chairman of the department may invite non-members of the department from within or without the University to participate in the examination.

Candidacy: Applications for admission to candidacy must be filed with the Dean of the Graduate School no later than No-

vember 1st by students who expect to receive the degree at the following commencement.

An application for admission to candidacy will be considered by the Graduate Board when the applicant has (1) completed two full academic years of graduate work, or its equivalent in part-time work, including one year at Clark University; (2) passed the required examination in a foreign language, (3) passed a preliminary examination in his chosen field of study; (4) obtained the written endorsement of his major department.

Candidacy for the degree of Doctor of Philosophy is valid through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board.

Dissertation: A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate. The dissertation, approved by the chief instructor or dissertation committee, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a précis, not exceeding 75 words, both approved by the instructor or committee under whom they were written, are also required.

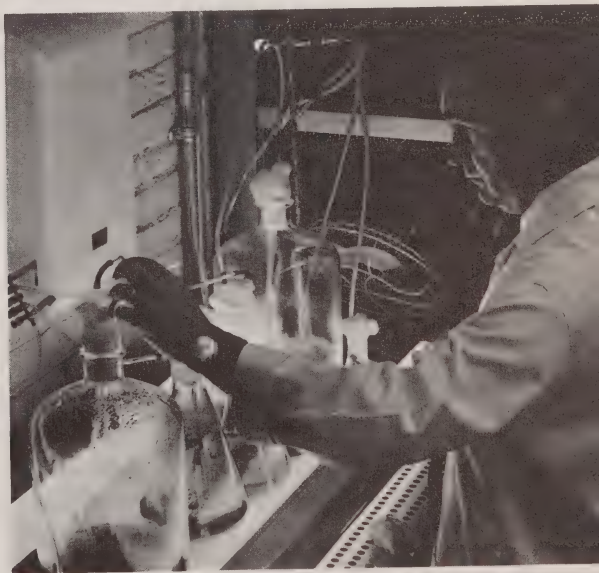
Not later than four weeks before the commencement at which the degree is to be conferred, the ribbon copy of the dissertation, together with two official title pages, an academic history, the ribbon copy of the abstract and of the précis, each in a form prescribed, must be delivered to the Registrar. At the same time, one or more copies of the dissertation and of the abstract may be required by the major department. The title page, précis and academic history forms are obtainable from the Graduate School Office. The ribbon copy of the dissertation must be typed on prescribed paper, marginally ruled in red, obtainable at the University Bookstore. For directions concerning the format of the dissertation, see "The Doctoral Dissertation" and "Suggestions for the Preparation of Doctoral Dissertations for Micro-filming" issued by the Graduate School Office with its notification of admission to candidacy.

The Registrar deposits the dissertation and the abstract in

the University Library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Mich., and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts*; the précis is printed by the University in an annual publication, *Dissertations and Theses*.

Diploma-Publication Fee: This fee for the Doctor of Philosophy degree is \$85.00. It covers the cost of the diploma, hood, and publication of the précis in the publication *Dissertation and Theses*, and the publication of the abstract in *Dissertation Abstracts*. It is payable when the dissertation is deposited with the Registrar and replaces the fee formerly paid at the time of admission to candidacy.

Final Examination: The final examination is oral and lasts for at least two hours. Additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and, at the discretion of the examining committee, may be questioned on the entire special



field of his study. The oral examination is conducted by a committee of at least four members, composed of the chairman of the department, at least one other member of the Graduate Board, and such members of the department and non-members from within or without the University as the chairman may appoint. The chairman notifies the Dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The Dean is authorized to invite any person from within or without the University to be present and to assist in the examination.

POST-DOCTORAL
STUDY

Post-doctoral students are classified in three categories: *Honorary Fellows* who are visitors for varying lengths of time, always more than a few days, who wish to observe activities of a department, to study, or to carry on research, but without formal teaching duties or support by the University; *Research Associates* who work full-time with designated members of the University staff on research projects, normally supported by grants, without formal teaching duties but with some responsibility for directing laboratory assistants; and *Trainees* who enroll in a formally offered post-doctoral training program.

The Honorary Fellows and Research Associates enjoy faculty status, although the extent to which faculty privileges may be granted may be restricted by availability of space and other resources.

GRADUATE
SCHOLARSHIPS,
FELLOWSHIPS
AND
ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well-qualified graduate students by the University from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds, and in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this employment yields useful experience.

Application: Application for a scholarship or fellowship to begin in September should be made before *February 20* to the chairman of the department in which the applicant expects to do his major work. Late applications are acted upon periodically.

All applications, after endorsement by the department, go to the Graduate Board for final action.

Research Fellowships: These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program.

Teaching Assistant Scholarships or Fellowships: These may be awarded to teaching assistants who are engaged in full-time activity on campus, of which approximately half-time is devoted to teaching duties and approximately half-time is devoted to graduate study.

Teaching Assistantships: In several departments, teaching assistantships, involving less than half-time, are available with stipends which vary according to the amount of service agreed upon.

Note that the departments of Biology, Chemistry, Economics, Geography, History, Mathematics, Physics, Psychology, Sociology, and the Romance Language program in Education require teaching experience for graduate degrees. See the departmental announcements in the catalog section on "Departments and Courses."

Assistantships: In several departments, assistantships are available. They involve a variety of services with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

Graduate Fellowship and Scholarship Funds: Stipends for graduate fellowships and scholarships are provided by:

THE ALUMNI ASSOCIATION FUND, provided by alumni who hold the degree of Doctor of Philosophy to benefit students studying for that degree.

THE GEORGE S. BARTON FUND, a bequest from the Honorable George S. Barton of Worcester, to be used for the benefit of native-born citizens of Worcester.

THE ELNORA W. CURTIS FUND, a bequest from Dr. Elnora W. Curtis, A.M. 1908, Ph.D., 1910, for the benefit of graduate students.

THE JOSEPH F. DONNELLY MEMORIAL FUND, a bequest from Lucretia F. Donnelly to help men who are enrolled in a course leading to the degree of Doctor of Philosophy.

THE AUSTIN S. GARVER FUND, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

GRADUATE SCHOOL SCHOLARSHIP FUND, a bequest from Alexander H. Bullock, a member of the Board of Trustees from 1926 to 1946 and president of the board from 1938 to 1946.

THE GEORGE FRISBIE HOAR FUND, the gift of Andrew Carnegie in honor of the second president of the University's Board of Trustees.

THE CHARLES H. THURBER FUND, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the board from 1919 to 1937.

GRADUATE AID

THE ELIZA D. DODGE FUND, to be granted to graduate students of limited means who are engaged in research work.

THE MYERS FUND, a gift of George E. Myers, Ph.D., '06, to assist graduate students to do research in education and psychology.

THE JOHN WHITE FIELD FUND, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

GRADUATE LOANS

Loans, bearing interest at three percent per year, are available for graduate students from these funds:

THE MARY S. ROGERS SCHOLARSHIP AND LOAN FUND, established in 1926 for the benefit of students in the graduate school.

THE SARAH M. THURBER LOAN FUND, established by the late Dr. Charles H. Thurber, former president of the University Board of Trustees, as a memorial to his mother.

For loans from these and other sources that may become available, application should be made at the College Financial Aid Office.

DEPARTMENTAL FUNDS

THE WALLACE W. ATWOOD RESEARCH FUND. The income of this fund may be used at the discretion of the staff in the Graduate School of Geography for the promotion of field studies in geog-



raphy by any member of the staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

THE CHESTER BLAND FUND. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the Department of History. It may also be used to defray the expense of visiting lecturers or of departmental research.

THE WALLACE W. GREENWOOD FUND. The income only is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two departments.

THE MORTON L. "SONNY" LAVINE FOUNDATION is a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History.

THE LIBBEY FUND, bequeathed to the University by Mary E. Libbey, is to establish a fellowship in physical geography and to aid the Department in that field.

OTHER
FUNDS

In addition to the Clark departmental funds listed above, several departments participate in national fellowship or traineeship programs; including:

HIGHER EDUCATION ACT, TITLE V-C fellowships: Prospective Teacher fellowships in Geography: Experienced Teacher fellowships in Geography and History.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION traineeships in the sciences.

NATIONAL DEFENSE EDUCATION ACT, TITLE IV fellowships in chemistry, geography, history and psychology.

NATIONAL SCIENCE FOUNDATION traineeships in biology, chemistry, economics, geography, mathematics and psychology.

PUBLIC HEALTH SERVICE fellowships and traineeships in biology, chemistry and psychology.

UNITED STATES STEEL fellowship in economics.

For further information consult the chairman of departments or the Dean of the Graduate School.

HOUSING
AND BOARD

Off-campus rooms and apartments for both men and women are available in the immediate area of the University. For information concerning accommodations, write directly to the Office of Buildings and Grounds, which keeps a bulletin board of available off-campus rooms and apartments, or to the department concerned. Students should plan to arrive a few days before registration in order to arrange for housing.

Graduate students are invited to take their board in the University dining halls at the cost of \$600 for the academic year (20 meals per week except during vacations). They will also find the Snack Bar in Jefferson Hall available for single meals.

INFIRMARY
AND
INSURANCE

A low-cost insurance plan covering ordinary medical expenses and limited maternity benefits for married students is available through the University. Unless a student is protected by similar insurance, he must enroll in this plan since all graduate students must be covered by Health and Accident Insurance. Students will be provided with information regarding this insurance during the summer.

Graduate students are entitled to use of the Infirmary for minor first-aid needs.

Graduate Tuition and Other Charges

GENERAL INFORMATION

Tuition and insurance charges are payable when the semester bill is received. Identification cards are provided each year of residence. A late registration fee is charged if registration is not completed by the end of the second week of the semester. Candidates who are not in residence must pay the non-resident fee until the requirements for the degree are fulfilled; non-payment will automatically terminate candidacy.

SCHEDULE OF TUITION AND OTHER CHARGES

Tuition: (Full Program: 12 to 18 semester hours) \$1,000.00 per semester

If less than a full program, the student will be charged according to the fraction of a program indicated by the Chairman of the department on the registration card.

Tuition for Special Graduate Students \$ 83.33 per semester hour

ETS Foreign Language Tests	7.00
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Insurance: Single Students	30.00
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Student and Spouse	130.00
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Family Plan	150.00
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Diploma-Publication Fee: (payable at the time the thesis or dissertation is deposited with the Registrar):

Master's Degrees	25.00
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Doctor of Philosophy and	
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Doctor of Education	85.00
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Non-Resident Candidate Fees: (payable on November 1 and March 1). If the thesis or dissertation is deposited with the Registrar before either date, no fee is charged for the semester.

The fees double upon renewal of candidacy.

Master's Candidates	12.50 per semester
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Doctoral Candidates	25.00 per semester
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(For the Master of Business Administration tuition and fees, see the "Evening College Catalog.")

THE SUMMER SCHOOL





SUMMER STUDY

Intensive instruction in numerous fields of study is offered through two summer programs: a six-week summer session and a three-week intersession program. A variety of courses is offered for undergraduates, graduate students and teachers. A student may register for nine semester hours of credit each summer by attending the Intersession and the Summer Session. Evening courses are also available during the summer to all students to continue their education while engaged in day-time employment.

DEGREES AND CREDIT

All courses offered in the Summer Session or Intersession programs are accepted at Clark for credit toward bachelor's degrees unless they are specifically limited in the description of the course. Many courses count toward the degrees of Master of Arts, Master of Arts in Education and Doctor of Philosophy. However, approval for such courses should be obtained in advance from the student's major department.

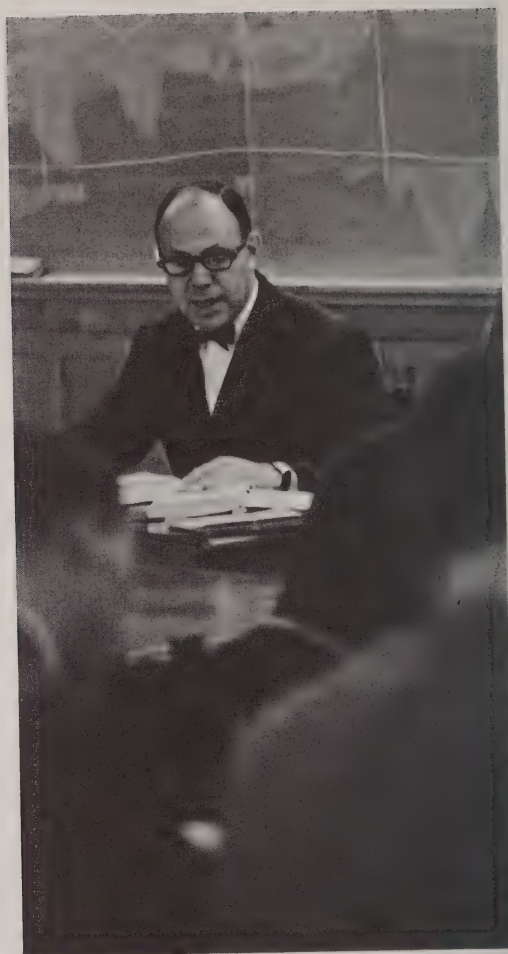
Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

A student may carry in a normal program one course in the Intersession and two courses in the Summer Session. Permission to carry an additional course may be granted but only in exceptional cases and with approval in writing prior to registration.

SUMMER SCHOOL CATALOG

Detailed information concerning the Summer Session and Intersession are contained in a Summer School catalog which may be requested from the director of the Summer School.

EVENING COLLEGE



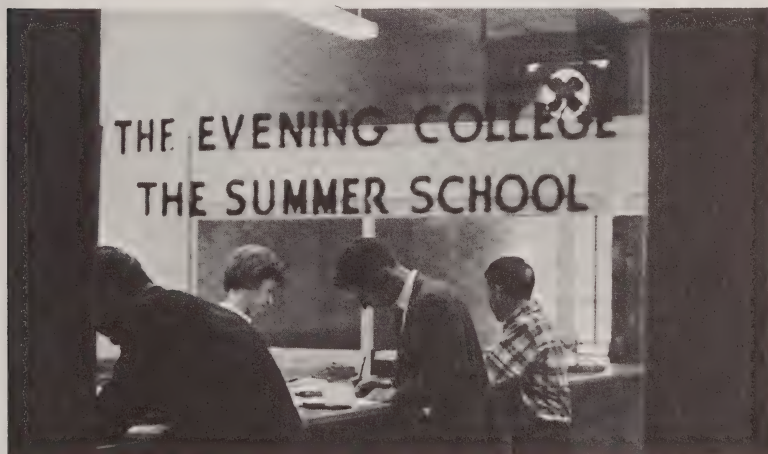
The Evening College

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a life-long process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts. Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to prepare for positions of increased responsibility.

Secondly, the Evening College provides an opportunity for adults to earn the bachelor's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the degree of Bachelor of Science in either general studies or business administration, to the degree of Bachelor of Fine Arts. The Evening College also offers the Diploma in General Studies after completion of a short formal program in liberal education designed specifically for adults.

Finally, as a community service, the Evening College organizes frequent non-credit short courses, institutes and seminars, which are tailored to the specific needs of various civic, professional and business groups.



- ADMISSION Students may be enrolled for either individual courses or formal programs of study.
- Individual Courses:* Admission to individual courses in the Evening College is open to all interested adults seeking to further their education. High school graduation is not required but desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Advanced courses for which prerequisite courses or experience are indicated are open only to persons who meet the stated requirements.
- Admission To Formal Programs:* Adults applying for a formal program of study in the Evening College will be required to submit records of their previous schooling prior to admission. Except under unusual circumstances applicants must possess a diploma from an accredited high school. Applicants for the Bachelor of Science degree or the Diploma in General Studies who have not attended college previously may arrange to have their high school records forwarded to the Evening College on forms supplied to them on request to the college. Adults who have attended other colleges should request that their transcripts be forwarded directly to the Evening College.
- EVENING COLLEGE CATALOG Detailed information about the Evening College is contained in a special catalog which may be requested from the director of the Evening College.
- DIVISION OF BUSINESS ADMINISTRATION The Master of Business Administration degree is offered by the Division of Business Administration. Through carefully selected substantive materials and an analytical approach to the practice of management, the program is designed to enable college graduates to supplement job experience in preparing for positions of executive responsibility. The course of study emphasizes administrative decision making rather than details of initial positions in business.
- The curriculum consists of 30 semester hours of credit. Details of the program and administration requirements may be obtained by writing to Mr. George A. Balko, Chairman, Division of Business Administration.



DEPARTMENTS AND COURSES

DEPARTMENTS AND COURSES

DEPARTMENT COURSES The course offerings of each department are listed in their numerical sequence. The announced courses are subject to modification and change.

COURSE NUMBERING SYSTEM Each course is indicated by number and title. A course number, unmodified by "a" or "b" indicates a year-course, one which continues through two semesters of an academic year. A course number followed by an "a" refers to a half-course usually offered in the first semester. A number followed by a "b" refers to a half-course usually offered in the second semester.

Two-semester courses are divisible unless an explicit statement of indivisibility appears in the course statement. Courses which are indivisible normally require the successful completion of the first semester as a prerequisite to entering the second semester, and students who register for an indivisible course must complete the second semester of the course before receiving credit for the first.

COURSE SEQUENCE Courses are arranged, in general, in sequence progressing from elementary to advanced courses.

Courses which are *opened to freshmen* are designated by the letter "F" before the course number.

Courses which are *primarily for undergraduates* are designated by numbers beginning with the numeral 1.

Courses for *advanced undergraduates and graduate students* are designated by numbers beginning with the numeral 2.

Courses which are *primarily for graduate students* are designated by numbers beginning with the numeral 3.

Anthropology

UNDERGRADUATE PROGRAM

Courses in anthropology and related subjects are offered in several departments at Clark. Students interested in this field may major in one of these departments and register for courses in anthropology under programs of study planned in consultation with their departmental advisors. Although a major in anthropology as such is not offered, the undergraduate courses available at Clark provide an adequate background for graduate study. A list of such courses is given below. A full description of each course will be found in the section of this catalog devoted to the department under which the course is offered.

Sociology F12a (Geography F12a). SOCIAL ANTHROPOLOGY.

Biology 12. VERTEBRATE MORPHOLOGY.

Mr. Nunnemacher.

Biology 110b. EVOLUTION.*

Geography 17b. INTRODUCTION TO CULTURAL GEOGRAPHY.

Mr. Blaut.

Geography 269b. ETHNO-GEOGRAPHY.

Mr. Blaut.

Geography 272a. CULTURE AND ENVIRONMENT.

Mr. Bowden.

Geography 272b. DYNAMICS OF SETTLEMENT.

Mr. Bowden.

Geography 276b. SEMINAR ON PEASANT AGRICULTURE.*

Mr. Blaut.

Geography 283b. CULTURAL GEOGRAPHY OF MIDDLE AMERICA.*

Mr. Blaut.

History 14a. HISTORY OF ASIA TO 1800.

Mr. Barrow.

History 290a. TRADITIONAL AFRICA.

Mr. Ford.

Linguistics 115. MAN AND LANGUAGE.*

Mr. Reid.

Sociology F13b. INDIVIDUAL AND SOCIAL STRUCTURE.

Mr. Gerber.

Sociology F22b. FIELD METHODS.

Mr. Gerber.

Sociology 36. READINGS IN SOCIAL ANTHROPOLOGY.

Sociology 245b. COMPARATIVE INSTITUTIONS.

Mr. Gerber.

Sociology 290a. CLASSIC SOCIAL THEORY.

Mr. Olson.

Sociology 290b. CONTEMPORARY SOCIAL THEORY.

Mr. Olson.

*Not Offered 1968-69

Biology

DEPARTMENT FACULTY

Rudolph F. Nunnemacher, Ph.D., *Professor of Zoology, Department Chairman*

David G. Moulton, Ph.D., *Professor of Physiology*

John J. Brink, Ph.D., *Associate Professor of Biochemistry*

Joseph C. Curtis, Ph.D., *Associate Professor of Zoology*

John T. Reynolds, Ph.D., *Associate Professor of Microbiology*

H. William Johansen, Ph.D., *Assistant Professor of Botany*

Helen G. Vassallo, Ph.D., *Lecturer in Zoology*

George Camougis, Ph.D., *Professor (Affiliate) of Physiology*

Werner P. Koella, M.D., *Professor (Affiliate) of Neurophysiology*

Warren Litsky, Ph.D., *Professor (Affiliate) of Microbiology*

Harris Rosenkrantz, Ph.D., *Professor (Affiliate) of Biochemistry*

Ian D. K. Halkerston, Ph.D., *Associate Professor (Affiliate) of Endocrinology*

Harry L. Jacobs, Ph.D., *Associate Professor (Affiliate) of Physiology*

Fernand G. Peron, Ph.D., *Associate Professor (Affiliate) of Biochemistry; Director of Steroid Training Program*

Linda Bartoshuk, Ph.D., *Assistant Professor (Affiliate) of Physiology*

UNDERGRADUATE PROGRAM

A departmental major must take Biology 8 and one of the following courses: Biology 9, Biology 10, Biology 11. In addition, the major must include three advanced courses in biology, Chemistry 11, Physics 11, Mathematics 12 and at least one additional course in chemistry, physics, or geology. Mathematics 12 does not count toward the fulfillment of the major requirements.

At least 36 semester hours of a major's program must be taken from courses outside the field of biology, chemistry, geology, mathematics, physics, and psychology 160, 222, 328.

HONORS PROGRAM

An Honors Program is available to especially well qualified majors and encourages the student to engage in an independent research project during the senior year. Frequently the Honors Project is the continuation of research begun during the summer under the National Science Foundation Undergraduate Research Participation Program.

GRADUATE PROGRAM

The department offers courses leading to Master of Arts and Doctor of Philosophy degrees in specialized phases of bacteriology, biochemistry, botany, cytology, physiology and zoology. Admission to the graduate program assumes adequate preparation in the basic sciences, an overall undergraduate record of B or better, and satisfactory standing in the Graduate Record Examination. Tuition scholarships and Teaching Assistantships are available. Detailed information can be obtained from the department chairman.

Master of Arts: The program usually requires three or four semesters of academic work and includes teaching experience and research culminating in an acceptable thesis.

Doctor of Philosophy: The requirements are identical with those of the University and can be found in the catalog section on The Graduate School and includes teaching experience. The student's program is planned according to his needs with his program director.

TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

A Training Program for Steroid Biochemistry has been established at the University through the cooperation of the Department of Biology and the Worcester Foundation for Experimental Biology with the support of the National Cancer Institute and the U. S. Public Health Service. Post-doctoral fellowships are available for persons possessing the Ph.D., M.D., or equivalent training. Further information may be obtained from the *Program Director, Dr. Fernand G. Peron.*

NEUROLOGICAL SCIENCES TRAINING PROGRAM

This program is supported by the U.S. Public Health Service and carries fellowships at both the pre- and post- doctoral level. Training is offered in Neurophysiology, Neuroanatomy and related areas. For further information contact the *Program Director, Dr. D. G. Moulton.*

COURSES

F8a. INTRODUCTION TO THE BIOLOGICAL SCIENCES.

The course provides a common basis to non-majors and prospective majors without advanced preparation in biology for all further course work in the department. It is concerned with the major generalizations of biology, with emphasis on cellular and molecular mechanisms. The laboratory sequence introduces some of the methodology that permits the student to participate in a scientific endeavor and emphasizes the analysis and interpretation of data. Three lectures and one laboratory period per week. *Four semester hours.* Mr. Reynolds

F9b. MICROBIOLOGY.

A survey of microorganisms, their activities and the methods by which they are studied. Prerequisite: Biology F8a or its equivalent. Three lectures and one laboratory period per week. *Four semester hours.* Mr. Reynolds.

F10b. BOTANY.

A survey of the taxonomy, structure, and physiology of plants. Prerequisite: Biology F8a or its equivalent. Three lectures and one laboratory period per week. *Four semester hours.* Mr. Johansen.

F11b. ZOOLOGY.

A survey treating the evolution of the major animal phyla with emphasis on structural and functional adaptations, and principles of ecology. Prerequisite: Biology F8a or its equivalent. Three lectures and one laboratory period per week. *Four semester hours.*

Mr. Nunnemacher.

12a. COMPARATIVE ANATOMY.

A comparative study of the morphology of the vertebrates with emphasis on the evolution of animals from fish to man. Prerequisite: Biology F11b. Two lectures and two laboratory periods per week. *Four semester hours.* Mr. Nunnemacher.

14a. CRYPTOGAMIC BOTANY.

The biology of algae, fungi, and mosses. Representative examples of the major groups are studied with emphasis on their structure, interrelationships and adaptation to their environment. Prerequisite: Biology F10b or consent of instructor. Three lectures and one laboratory period per week. *Four semester hours.* Mr. Johansen.

17b. GENERAL ECOLOGY.

Introductory study of the distribution of plants and animals, their inter-relationships and adaptations to a wide variety of environments such as seashore, sand dunes, woodlands and ponds. Field trips to Mt. Monadnock and other areas of ecological interest will be taken during laboratory periods or on Saturday. Three lectures and one laboratory period per week. Usually offered during the summer. *Four semester hours.*

18b. GENETICS.

Principles and problems of genetics. *Three semester hours.*

100b. ANIMAL PHYSIOLOGY.

This course integrates structure-function relationships in animal organ systems with particular emphasis on mammalian systems. The laboratory demonstrates the differentiating characteristics of the tissues and organs making up the respective systems. Prerequisite: Biology F11b. Three lectures and one laboratory period per week. *Four semester hours.*
Mrs. Vassallo.

110b. EVOLUTION.

Not offered, 1968-69.

General principles. *Three semester hours.*

120b. HISTOLOGY.

The microscopic anatomy of tissues and organs of mammals. Prerequisite: Biology 12a. Two lectures and two laboratory periods per week. *Four semester hours.*

Mr. Nunnemacher.

137b. CELLULAR BIOLOGY.

The cell as a structural and functional unit. Introduction to the physiochemical properties and metabolic roles of molecules and macromolecules of cellular origin. Discussion of the roles of the nucleus and cytoplasm in the regulation of cellular processes. Three lectures per week. Prerequisite: Biology F8a or equivalent. *Three semester hours.*

Mr. Curtis.

215a. INVERTEBRATE ZOOLOGY.

Not offered, 1968-69.

224a. NEUROANATOMY.

The structural and functional organization of the central nervous system of man. Prerequisite: Biology 12a or consent of instructor. Three lectures per week. *Three semester hours.*

Mr. Nunnemacher.

225a. ELECTRON MICROSCOPY.

Introduction to the principles of electron optics, use of the electron microscope, preparation of specimens and the techniques of electron microscopy applicable to biological investigations. Two lectures and two laboratory periods per week. Prerequisites: permission of the instructor. *Four semester hours.*

Mr. Curtis.

231b. BACTERIAL PHYSIOLOGY.

Not offered, 1968-69.

Lecture topics and laboratory exercises selected to demonstrate chemical and physical principles underlying bacterial activities. Two lectures and two laboratory periods per week. Prerequisites: Biology 232a and consent of the instructor. Biology 240a is recommended. *Four semester hours.*

Mr. Reynolds.

232a. BACTERIOLOGY.

The biology of the bacteria and certain related forms with emphasis on their ecological role. Prerequisites: Biology F9, Chemistry 13, and consent of instructor. Two lectures and two laboratory/discussion periods per week. *Four semester hours.* Mr. Reynolds.

240a. GENERAL PHYSIOLOGY.

Introduction to the physical and chemical phenomena underlying the functions common to living organisms. Two lectures and two laboratory periods per week. Prerequisites: Biology 137b, Chemistry 11 and Physics 11. *Four semester hours.* Mr. Moulton.

241a. ENDOCRINOLOGY.

Not offered, 1968-69.

General principles of vertebrate endocrinology. *Three semester hours.* Mr. Halkerston.

242a. COMPARATIVE ANIMAL PHYSIOLOGY.

Not offered, 1968-69.

248b. SENSORY PHYSIOLOGY.

A seminar on the principles of organization and function of invertebrate and vertebrate sensory receptors. Prerequisite: Biology 240a. *Three semester hours.* Mr. Moulton.

249b. NEUROPHYSIOLOGY.

Not offered, 1968-69.

Physiology of central and peripheral nervous systems, receptors and muscles, considered in both vertebrates and invertebrates. Three lectures and one laboratory period per week. Prerequisite: Biology 240a, or consent of the instructor. *Four semester hours.*

Mr. Moulton.

257b. BIOPHYSICS.

Not offered, 1968-69.

Consideration of the physical properties of biological systems. Influence of various physical agents upon biological structure and function. Physical methods of analysis of biological macromolecules. Three lectures per week. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Curtis.

260a, b. SPECIAL PROBLEMS.

Advanced semi-independent study of an approved topic under the direction of a departmental member. Consent of instructor required. Required for honors in biology. *Three or four semester hours.*

Staff.

268a. PRINCIPLES OF PHARMACOLOGY.

Not offered, 1968-69.

This course is intended to acquaint the student or research worker with established principles and the more important phenomena involved in the study of pharmacology. Particular emphasis is placed on the quantitative aspects of the interaction of chemical compounds or drugs with biological systems. The principal pharmacological actions of several important drugs are illustrated. *Three semester hours.*

270. BIOCHEMISTRY.

The principles of mechanisms of biochemical reactions in an understanding of the metabolism of foodstuffs and the role of enzymes, nucleic acids and hormones. An acquaintance with the instrumentation in biochemical research will be presented. Prerequisite: Chemistry 13. Three lectures, one laboratory per week. *Four semester hours each semester.*

Mr. Brink.

272a. METABOLIC PATHWAYS IN BIOCHEMISTRY.

Not offered, 1968-69.

The course is concerned with a discussion of the biosynthetic pathways of essential biological materials i.e. amino acids, lipids, vitamins and minerals in those living systems, plant and animal, capable of producing them. In addition their biochemical importance in mammals will be stressed. Prerequisite: Biology 270. *Three semester hours.*

Mr. Rosenkrantz.

273b. SEMINAR IN NEUROCHEMISTRY.

The metabolic aspects of brain amines and biopolymers will be considered in relation to neural function. Effects of drugs on memory processes will be discussed in terms of biochemical mechanisms. Prerequisite: Biochemistry 270 or consent of instructor. *Three semester hours.*

Mr. Brink.

300. READINGS AND RESEARCH IN BIOLOGY.*Three to four semester hours.*

Staff.

325a. SEMINAR IN ULTRASTRUCTURE.

Discussion of the structure of macromolecules and subcellular organelles in relation to their biological functions. Evidence obtained by a variety of physical and chemical methods will be considered, particular emphasis being placed on electron microscopic studies. Consent of instructor required. *Three semester hours.*

Mr. Curtis.

332b. SEMINAR IN BACTERIOLOGY.

Selected topics in bacterial ecology and physiology. Consent of instructor required. *Three semester hours.*

Mr. Reynolds.

341a. SEMINAR IN ENDOCRINOLOGY.

Not offered, 1968-69.

Three semester hours.

Mr. Curtis.

350. GRADUATE SEMINAR.

Staff.

355a. PROBLEMS IN BEHAVIORAL PHYSIOLOGY.

Topics will be chosen in which interdisciplinary substantive material and methods from neuro-physiology, endocrinology, nutrition, sensory and regulatory physiology, and psychology (learning, modification, and sensation and perception) will be applied to simple behavioral systems in the whole organism. Prerequisite: Biology 240a. *Three semester hours.*

Mr. Jacobs, Miss Bartoshuk.

360. MASTER'S THESIS.

Staff.

390. DOCTORAL DISSERTATION.

Staff.

Biomedical Engineering

The Program in Biomedical Engineering is a graduate program under the joint sponsorship of Clark University and Worcester Polytechnic Institute. The aim of the program is to combine the resources of the two institutions to provide special education in this rapidly developing interdisciplinary area. Students entering the program must have a bachelor's degree in mathematics or one of the basic or engineering sciences. The master's program will include a minimum of five full courses taken at both institutions.

All students will be expected to achieve some basic knowledge in biology, chemistry, engineering, mathematics and physics. Since a thesis on research is also required, the program will normally require at least two years of study. In general, the requirements for the degree will be consistent with the requirements for a master's or doctoral degree at both institutions. The detailed requirements for each student will be worked out by a Committee on Biomedical Engineering made up of faculty members from both institutions. Students enrolled at Clark will receive an M.A. or Ph.D. in Biology, the actual degree noting the cooperation of W.P.I. Conversely, students enrolled in the first instance at W.P.I. will receive the M.S. or Ph.D. in Biomedical Engineering, with the cooperation of Clark indicated on the degree.

For further information, write to: Dr. David G. Moulton, Director, Biomedical Engineering Program, Clark University, Worcester, Massachusetts 01610.

Chemistry

DEPARTMENT FACULTY

Edward N. Trachtenberg, Ph.D., *Associate Professor of Chemistry*

Wen-Yang Wen, Ph.D., *Associate Professor of Chemistry*

Allan M. Zwickel, Ph.D., *Associate Professor of Chemistry*

Daeg S. Brenner, Ph.D., *Assistant Professor of Chemistry*

Karen L. Erickson, Ph.D., *Assistant Professor of Chemistry*

Paul T. Inglefield, Ph.D., *Assistant Professor of Chemistry*

Robert I. Morse, Ph.D., *Assistant Professor of Chemistry*

UNDERGRADUATE PROGRAM

In offering a variety of introductory courses in the major branches of modern chemistry, the department seeks to satisfy the needs and desires of (1) those interested in pursuing a career in chemistry, (2) those in related science areas, the proper understanding of which requires a background in chemistry, and (3) the non-scientists who want some knowledge of chemistry as part of their liberal education. In addition to these courses, a large number of more specialized subjects are treated in advanced courses.

The requirements for a major are Chemistry 13 with either 103 or 113a, 113b, 14a, 19 and 290a; Physics 11b or 12b and Mathematics 12; and four one-semester elective courses of which one must be in chemistry and the other three in mathematics beyond Mathematics 12, in physics beyond Physics 11 or 12 or in biology. In addition, all students must satisfactorily complete 36 semester hours outside courses in Group A, courses in statistics offered by any department, and courses in linguistics.

Majors are urged to take Physics 130a, additional courses in mathematics and at least two years of German. Those who intend to do graduate work in chemistry are further advised to acquire a reading knowledge of either French or Russian.

An entering student with a sound background in chemistry is encouraged to take a placement examination given at the beginning of the academic year. Satisfactory performance on this examination can satisfy the Chemistry 11 prerequisite for Chemistry 13. This will permit completion of the requirements for the major no later than the junior and in some cases the sophomore year, leaving the student's senior year open for more sophisticated pursuits. Among these are the honors program and an Undergraduate Research Participation Program sponsored by the National Science Foundation.

GRADUATE PROGRAM

The department offers programs leading to the degrees of Master of Arts and Doctor of Philosophy with specialization in various fields of chemistry and in chemical physics. Entering students must take placement examinations in the basic areas of undergraduate instruction; these examinations are used solely for the purpose of arriving at a satisfactory program of courses. Up to one year's equivalent of teaching apprenticeship will be required of all candidates for advanced degrees.

The requirements for the Master's degree are essentially those of the University. The course requirements for the Ph.D. are as follows:

1. All students must demonstrate satisfactory performance (B— or better) in Chemistry 230a, 322a, 340b and 379b. Students specializing in organic chemistry may substitute 290a for 340b.

2. All students must demonstrate satisfactory performance (B— or better) in at least two of the following courses: Chemistry 212a, 242b, 280b, 323b, 333b, 335a, 361b and 369a.

3. Additional courses may be required by the student's research supervisor.

Qualifying and preliminary examinations must be passed, and the University language requirement must be met. Students not satisfying the University requirement in German but requiring it for their research may be asked to satisfy the department as to their proficiency in reading scientific German. For further details on formal requirements consult the appropriate departmental publications.

Graduate scholarships, teaching assistantships, research fellowships, NDEA fellowships and NSF and NASA traineeships are available. Further information on these awards may be obtained from the department chairman.

COURSES

F11. GENERAL CHEMISTRY.

Systematic study of the elements and their principal compounds and the fundamental laws and theories of chemistry. Three lectures and three laboratory hours per week. Divisible with consent of the instructor. *Four semester hours per semester.*

Mr. Inglefield, Mr. Morse and Mr. Zwickel.

13. ORGANIC CHEMISTRY.

Three lectures per week. Chemistry 103 or 113a must be taken concurrently. Prerequisite: a grade of C— or better in Chemistry 11, or permission of instructor. *Three semester hours per semester.*

Mr. Trachtenberg.

14a. ANALYTICAL CHEMISTRY.

Theoretical principles and technical methods employed in determining the composition of matter. Two lectures and six laboratory hours per week throughout the semester. Prerequisite: Chemistry 11. *Four semester hours.*

Mr. Wen.

19. PHYSICAL CHEMISTRY.

Principles of physical chemistry applied to gases, liquids, solutions, crystalline solids; chemical thermodynamics, homogeneous and heterogeneous equilibria, electrolytic conductance and transference, electromotive force, reaction kinetics, colloids. Three lectures and three laboratory hours per week. Prerequisites: Physics 11b or 12b, Mathematics 12, a grade of C or better in Chemistry 11 or 13 or permission of instructor; Chemistry 13 and 14a may be taken concurrently. Additional course work in mathematics is recommended. *Four semester hours each semester.*

Mr. Inglefield.

103. ORGANIC CHEMISTRY LABORATORY.

Laboratory study of the preparation and properties of important organic compounds. Four laboratory hours per week. Must be taken concurrently with Chemistry 13. *One semester hour per semester.* Miss Erickson.

113a. ACCELERATED ORGANIC CHEMISTRY LABORATORY.

Essentially identical to Chemistry 103. One hour conference and seven hours of laboratory per week. Must be taken concurrently with Chemistry 13. Strongly recommended for Chemistry Majors; optional for others. *Two semester hours.* Miss Erickson.

113b. QUALITATIVE ORGANIC ANALYSIS.

Laboratory study of the identification of organic compounds by both classical and modern instrumental techniques. Prerequisites: Chemistry 113a or consent of the instructor, and Chemistry 13 concurrently or previously. One hour conference and 7 hours of laboratory per week. Required for Chemistry Majors. *Three semester hours.* Miss Erickson.

212a. INORGANIC CHEMISTRY.

Theoretical and descriptive inorganic chemistry. Not open to those who have taken 14a during the period 1962-1965. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Zwickel.

214. SPECIAL PROJECTS.

Individual work of an investigative nature which may include a search of chemical literature as well as laboratory work. *Three semester hours each semester.* Staff.

215. HONORS COURSE.

Primarily for majors seeking departmental honors in chemistry. A laboratory research project. *Three semester hours each semester.* Staff.

230a. PHYSICAL ORGANIC CHEMISTRY.

Fundamentals of organic chemistry. Molecular structure, acidity and basicity, kinetics and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisites: Chemistry 13 and 19 or consent of the instructor. *Three semester hours.*

Mr. Trachtenberg.

242b. NUCLEAR AND RADIOCHEMISTRY.

Fundamentals of nuclear science; production, isolation, identification and measurement of radioactive atoms. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Brenner.

280b. INSTRUMENTAL METHODS.

Not offered, 1968-69.

The principles and application of modern instrumental techniques to the separation and analysis of mixtures and for the characterization of pure compounds. Two lectures and six laboratory hours per week. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Brenner.

290a. ADVANCED PHYSICAL CHEMISTRY.

Elementary quantum-mechanical treatment of the structure of nuclei, atoms and molecules. Statistical mechanics of simple systems. Three lectures per week. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Brenner.

300. RESEARCH.

Three to fifteen semester hours each semester.

Staff.

322a. THERMODYNAMICS.

Applications of classical thermodynamics to chemical systems. *Three semester hours.*

Mr. Morse.

323b. STATISTICAL MECHANICS.

Statistical mechanical analogs of thermodynamic functions and their application to chemical systems. Prerequisites: Chemistry 290a and 322a, or their equivalents. *Three semester hours.*

Mr. Wen.

331b. ADVANCED PHYSICAL ORGANIC CHEMISTRY.

Not offered, 1968-69.

Modern interpretation of organic reaction mechanisms including molecular rearrangements, chain reactions and other reactions not covered in Chemistry 230a. Prerequisite: Chemistry 230a. Offered in alternate years. *Three semester hours.*

Mr. Trachtenberg.

333b. SYNTHETIC ORGANIC CHEMISTRY.

Lectures on synthesis of organic molecules emphasizing scope and limitations of general methods, mechanism and stereochemistry. Synthesis of carbon to carbon bonds, oxidation and reduction. Prerequisite: Chemistry 230a, or consent of the instructor. Offered in alternate years. *Three semester hours.*

Mr. Trachtenberg.

335a. NATURAL PRODUCTS.

Not offered, 1968-69.

The chemistry of selected naturally occurring compounds. Structure determination, synthesis, mechanistic interpretation of exotic transformations, and biogenetic theory. Prerequisite: consent of the instructor. *Three semester hours.*

Miss Erickson.

340b. QUANTUM CHEMISTRY.

Elementary quantum mechanics of simple systems, properties of wave functions, approximation methods for complex systems. *Three semester hours.*

Mr. Morse.

344a. SELECTED TOPICS IN ADVANCED NUCLEAR CHEMISTRY.

Discussion of current experimental and theoretical literature in nuclear reactions, fission, nuclear spectroscopy, or applications of nuclear methods to problems in geochemistry. Prerequisite: Chemistry 242b. *Three semester hours.*

Mr. Brenner.

350. SEMINAR.

Reports on research work and discussions of recently published work. No credit.

Guest Lecturers, Staff and Graduate Students.

360b. COORDINATION COMPOUNDS.

Not offered, 1968-69.

Chemical and physical properties of complexes, including theories of coordination, stereoisomerism, reaction mechanisms and solution stabilities. Offered in alternate years. *Three semester hours.*

Mr. Zwickel.

361b. MOLECULAR STRUCTURE.

Physical methods relevant to the determination of the structure of molecules (x-rays, electron diffraction, nuclear magnetic resonance, electronic properties, etc.). Prerequisite: consent of the instructor. Offered in alternate years. *Three semester hours.*

Mr. Inglefield.

369a. ELECTRONIC SPECTROSCOPY.

Not offered, 1968-69.

Introduction to the studies of ultraviolet and visible absorption spectra as well as emission spectra. Prerequisite: consent of the instructor. Offered in alternate years. *Three semester hours.*

Mr. Wen.

379b. SPECIAL TOPICS.

Research seminars; reports by graduate students. *Three semester hours.*

Staff.

380. RESEARCH CONFERENCE.

Informal reports of research work being done in the laboratory. No credit.

Staff and Graduate Students.

Classics

DEPARTMENT FACULTY

Claude W. Barlow, Ph.D., *Professor of Classics*

UNDERGRADUATE PROGRAM

Undergraduate courses are provided for the acquisition of a reading knowledge of Greek and Latin and for the study of literary masterpieces in those original languages. Courses also are offered for the candidate who wishes to major in Latin. The major should include Latin 13 during the freshman year, three advanced Latin courses and three courses in related fields to be approved by the department. Other courses, given entirely in English, deal with phases of the Greek and Roman civilizations. Students who wish to elect Elementary Greek or Intermediate Latin should consult the department as far in advance as possible since these courses are not offered every year.

In addition, at least 36 semester hours of a major's program must be taken from other than Group C and Group D courses.

Clark students may also take for credit appropriate courses in Greek or Latin offered by the College of the Holy Cross and Assumption College.

COURSES

Greek

F11. ELEMENTARY GREEK.

Greek grammar through forms, syntax, vocabulary and reading; selections from Xenophon's *Anabasis* or other simple prose. Open to freshmen. Indivisible course. *Three semester hours each semester.* Mr. Barlow.

12. ATTIC GREEK PROSE; HOMER's *Iliad*.

Not offered, 1968-69.

Prerequisite: Greek 11. *Three semester hours each semester.*

13. GREEK DRAMA.

Not offered, 1968-69.

Prerequisite: Greek 12 or the equivalent. *Three semester hours each semester.* Mr. Barlow.

F123a. GREEK CIVILIZATION.

Lectures, readings and discussion on the history, literature, art, religion and government of ancient Greece, with emphasis on the elements which have contributed most to Western civilization. Given in English. *Three semester hours.* Mr. Barlow.

Latin

F11. ELEMENTARY LATIN.

Not offered, 1968-69.

Three semester hours each semester.

F12. INTERMEDIATE LATIN; VIRGIL'S *Aeneid*.

Not offered, 1968-69.

This course will begin with an intensive review of forms, syntax and vocabulary for at least seven weeks. Prerequisite: two years of secondary school Latin. Offered in alternate years. *Three semester hours each semester.*

F13. CATULLUS AND PLAUTUS; TERENCE AND HORACE.

Prerequisite: Latin 12 or three years of secondary school Latin. *Three semester hours each semester.* Mr. Barlow.

15. ROMAN HISTORIANS; ROMAN SATIRE.

Not offered, 1968-69.

Prerequisite: Latin 13. *Three semester hours each semester.*

17. ROMAN PHILOSOPHERS; SURVEY OF LATIN LITERATURE.

Three semester hours each semester.

Mr. Barlow.

19. POETS OF THE AUGUSTAN AGE.

Not offered, 1968-69.

Three semester hours each semester.

F123b. ROMAN CIVILIZATION.

Lectures, readings and discussion on the history, literature, philosophy, art, religion, law and government of ancient Rome, with emphasis on the transmission of Greek civilization and the condition of the Roman Empire during the early years of Christianity. Given in English. *Three semester hours.*

Mr. Barlow.

Comparative Literature

18. LITERATURE AND THE NATURE OF MAN.

The course is designed to serve the general student by providing him with an opportunity to investigate ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representative of the cultures of which they are products. The course is planned not only to introduce the student to a body of knowledge and experience held in common by educated men and women in our society but also to help him to clarify his thinking concerning certain basic problems and to develop attitudes that are both humane and creative. The subject matter undertaken includes Sophocles' *Oedipus the King*, the *Book of Job*, the *Inferno* from Dante's *Divine Comedy*, Shakespeare's *King Lear*, Milton's *Paradise Lost*, Moliere's *Misanthrope*, Goethe's *Faust*, Part I, and selected poems of T. S. Eliot. All non-English works are read in translation. Classified as a Group C course. Open to sophomores, juniors and seniors with the consent of the instructors. Successful completion of the first semester is normally required for admission to the second semester. *Three semester hours each semester.*

Mr. King, Mr. Anderson.

19a. THE LITERATURE OF THE HEBREW PROPHETS.

An analysis of texts from Amos, Hosea, Micah, Isaiah, Jeremiah, Ezekial and Deuteronomy in terms of their historical, social, and religious background and the role played by the Prophets of Israel in shaping the moral and ethical thinking of the Biblical Age. *Three semester hours.*

Rabbi Klein.

ENGLISH 127b. MODERN CONTINENTAL DRAMA.

See description under English.

ENGLISH 150a. LITERATURE OF WESTERN CIVILIZATION.

See description under English.

ENGLISH 245b. MODERN CONTINENTAL FICTION.

See description under English.

GERMAN 197b. THE FAUST THEME IN LITERATURE.

See description under German.

Mr. Arndt.

GERMAN 199. THE GERMAN CONTRIBUTION TO WORLD LITERATURE. Not offered, 1968-69.

See description under German.

Mr. Arndt.

RUSSIAN 179. SURVEY OF RUSSIAN LITERATURE.

See description under Russian.

Not offered, 1968-69.

Mrs. Sorokin.

RUSSIAN 180. SOVIET LITERATURE.

See description under Russian.

Offered in Clark Evening College.

Mrs. Sorokin.

Economics

DEPARTMENT FACULTY

Roger C. Van Tassel, Ph.D., *Professor of Economics, Department
Chairman*

James A. Maxwell, Ph.D., *Professor of Economics, Emeritus*

F. Eugene Melder, Ph.D., *Professor of Economics*

Howard W. Nicholson, Ph.D., *Professor of Economics*

George E. Hargest, M.B.A., *Associate Professor of Economics*

Frank W. Puffer, Ph.D., *Associate Professor of Economics*

Sang C. Suh, Ph.D., *Assistant Professor of Economics*

Donald T. Savage, Ph.D., *Assistant Professor of Economics*

Herrington J. Bryce, Ph.D., *Assistant Professor of Economics*

Constantine N. Michalopoulos, Ph.D., *Assistant Professor of Economics*

Albert J. Sargent, M.A., *Lecturer in Economics*

UNDERGRADUATE PROGRAM

The undergraduate program is designed to give the student a comprehensive grasp of the underlying principles and functions of economic institutions, and to develop habits of systematic thought. Economics 11 is a prerequisite to all other courses in Economics. Majors in Economics are required to take Economics 205a, Intermediate Economic Theory, and Economics 205b, National Income Analysis and are strongly advised to take Economics 160, Introduction to Statistical Method. Students planning on graduate study in Economics are advised to elect courses in Economic Theory, Statistics and Econometrics, and Mathematics. Some courses in Economics and Business offered in the Evening College may be counted toward the major with the approval of the department chairman.

In addition, at least 36 semester hours of a major's program must be selected from other than the following fields or courses: geography, history, government, international relations, sociology, mathematics 11 and 12, and psychology 11 and 170b.

Candidates for departmental honors will engage in a program of independent study consisting of reading and research designed in part to give them specialized training in the fields of their major interest and in part to supplement formal courses. Ordinarily a candidate will begin his honors work in the second semester of the junior year by enrolling in the Honors Seminar.

In making elections, students should bear in mind that some advanced courses may be offered only in alternate years.

GRADUATE PROGRAM

The University offers facilities for graduate study and research leading to the Master of Arts degree and Doctor of Philosophy degree in Economics for a small number of selected students.

Graduate students may elect to take a limited amount of work in related courses offered by other departments.

Scholarships and fellowships are available for a limited number of well-prepared students. These appointments exempt their holders from tuition fees and some carry stipends in varying amounts. Several teaching assistantships are also awarded which enable graduate students to gain experience in undergraduate instruction. These carry remission of tuition and a cash payment, up to \$2,000 for part-time work (one-half).

Master of Arts Program

The Master of Arts program is worked out individually with each student.

An academic year of full-time study in residence, or its strict equivalent in summer sessions and part-time study, is a minimum requirement for a master's degree. Residence study is broadly defined as graduate work done at the University under the immediate personal supervision of at least one member of the University faculty. A program of full-time study is equivalent to 24 semester hours.

A student should discuss his plans with the department chairman on or before Registration Day and secure approval of his course program. Each M.A. candidate is required to take a course in Theory, Intermediate or Advanced, depending upon his background.

A Master's thesis will be written on a topic in the field of the student's special interest under the supervision of a member of the Department. Each student should be sure to enroll for a thesis course at the beginning of his program. The thesis course is equivalent to six semester hours. This, added to the 24 semester hours of course credit, gives the student the necessary 30 semester hours of credit for the M.A. degree.

Doctor of Philosophy Program

Two full academic years of graduate work, or its equivalent in part-time work, is necessary for admission to Ph.D. candidacy. One of these years must be spent in residence at Clark University. In residence is broadly defined as work done at Clark University under the immediate personal supervision of at least one member of the University faculty. For the degree of Doctor of Philosophy, twenty-four semester hours is a normal full-time program.

All candidates for the Ph.D. in Economics are required to demonstrate proficiency in Methods of Quantitative Research in Economics, i. e. by passing designated courses offered in the Department or, in the case of prior preparation, by passing a test given by the Department. Also, students are required to demonstrate proficiency in one of the following: (a) Proficiency in a foreign language closely related to the student's professional interest as an Economist; (b) proficiency in Mathematics for economists.

Each student in the Ph.D. program is required to demonstrate proficiency in Economic Theory. The Economic Theory requirement includes Micro-theory, Macro-theory and the History of Doctrine. Some use of mathematics may be required in the examination in Economic Theory. The student satisfies the Economic Theory requirement by passing a six-hour written examination. This examination is taken, normally, during the third full semester of graduate study.

Upon completion of the Economic Theory requirement, the student is examined in three special fields at a two hour preliminary oral examination given usually within a semester after completion of the Economic Theory requirement. These fields may be selected from among the following: Money and Banking, Public Finance, Industrial Organization, International Trade, Labor, Economic Growth, Regional Economics, Econometrics, or one field selected from related subjects. If Econometrics is selected as a special field, the level of performance required is substantially higher than the general requirement in Econometrics for all Ph.D. candidates. Within a month after having passed the oral exam, each student is expected to make a presentation of his proposed dissertation topic before an informal conference with his dissertation committee. The final examination of two hours, or less, will be devoted exclusively to an oral defense of the dissertation.

The dissertation must be a real contribution to knowledge, based upon independent research, convincingly presented, and acceptably written.

Some teaching experience at Clark, or such other teaching as the Department may regard as equivalent, is prerequisite to the Doctor's degree.

COURSES

F11. PRINCIPLES OF ECONOMICS.

Open to freshmen. *Three semester hours each semester.*

Mr. Van Tassel.

F100. INTRODUCTION TO ACCOUNTING.

Approaching accounting as an analytical tool, the accounting cycle and the resulting financial and fund flow statements are developed for service, merchandising and manufacturing enterprises within the context of the various forms of business organization.

Three semester hours each semester.

Mr. Hargest.

102. INTERMEDIATE ACCOUNTING.

Not offered, 1968-69.

Accounting theory and procedures and their application to asset, liability and proprietorship accounts. Analysis of financial statements, including statements from incomplete data and the statement of application of funds. Emphasis is on problem analysis and solution. Indivisible course. Prerequisite: B.A. 100. *Three semester hours each semester.*

Mr. Hargest.

13a. MONEY AND BANKING.

Three semester hours.

Mr. Savage.

140b. CONSUMER ECONOMICS.

Theories of consumer choice are analyzed. Rational planning and economy in important fields of consumers' decisions are explored. Government and private agencies' roles in consumer education and protection are reviewed. *Three semester hours.* Mr. Melder.

141b. ANALYSIS OF FINANCIAL STATEMENTS.

The course is designed for those who may not have studied accounting, but wish to learn something of the methods of the analysis, interpretation and use of financial statements. *Three semester hours.* Mr. Hargest.

142a. HISTORICAL ANALYSIS OF ECONOMIC GROWTH.

Economic History of selected countries compared for periods preceding and during transition to modern economic organization. Comparisons are drawn from Europe, Asia, and North America. Prerequisite: Economics 11. *Three semester hours.* Mr. Melder.

142b. ECONOMICS OF UNDERDEVELOPED REGIONS.

An analysis of underdeveloped nations. Economic, cultural, social, and political factors that have an importance in economic development. Prerequisite: Economics 11. *Three semester hours.* Mr. Melder.

15a. PUBLIC FINANCE.

The principles of governmental expenditures, revenues, and debts, with particular reference to the United States. *Three semester hours.* Mr. Bryce.

160a. INTRODUCTION TO STATISTICAL ANALYSIS.

The theory and application of frequency distributions; measures of central tendency; dispersion; skewness and kurtosis. An introduction to probability theory; estimation by confidence interval; acceptance sampling; quality control; analysis of variance; and other statistical tests of significance complete consideration of univariate distribution. Prerequisite: Mathematics 11 or equivalent. *Three semester hours.* Mr. Sargent.

160b. INTRODUCTION TO STATISTICAL ANALYSIS.

Problems are integrated with a systematic presentation of principles and methods. Topics include price and quantity indexes; seasonal trend and cycle analysis; linear and curvilinear regression and consideration of the stochastic (Ut) term. Finally, tests of statistical significance on the parameters of the regression equation are made. Prerequisite: Economics 160a. *Three semester hours.* Mr. Sargent.

175a. THE SOVIET ECONOMY.

Introduction to Marxist economics; the historical evolution and present structure of the Soviet Economy; the operation and problems of a centrally planned economy; current reforms and future trends. *Three semester hours.* Mr. Michalopoulos.

184a. MANAGEMENT-LABOR RELATIONS.

Management-employee relationships with special reference to union and management bargaining. Opportunity for development of perspective and judgment in problems of management in industrial situations and labor relations law. Discussion and case methods used. Prerequisite: Economics 11. *Three semester hours.* Mr. Melder.

185b. CONTEMPORARY ECONOMIC PROBLEMS.

This course permits the non-economics major to develop a working knowledge of current economic problems. Readings which require very limited technical skill or knowledge are assigned. Students are expected to participate actively in discussions. Prerequisite: Economics 11. *Three semester hours.* Mr. Bryce.

200a. THEORIES OF ECONOMIC GROWTH.

A systematic survey of the growth theories for both advanced and underdeveloped economies, the measurement of economic growth and change. Prerequisite: Economics 205 or consent of instructor. *Three semester hours.* Mr. Suh.

200b. ECONOMIC POLICIES FOR DEVELOPMENT.

Domestic and international economic policies for development including development planning and the case studies. Prerequisite: Economics 200a or consent of instructor. *Three semester hours.* Mr. Suh.

202. COST ACCOUNTING.

Principles of cost accounting as related to job order, process, estimated and standard cost systems. Cost for profit determination and managerial decision making are considered. Prerequisite: Economics 100. *Three semester hours each semester.* Mr. Hargest.

205a. INTERMEDIATE ECONOMIC THEORY.

An analysis of contemporary price theory. *Three semester hours.* Mr. Bryce.

205b. NATIONAL INCOME ANALYSIS.

A study of contemporary income theory. *Three semester hours.* Mr. Savage.

207a. INTERNATIONAL TRADE THEORY.

Emphasis is put on international value determination and the mechanisms for adjusting to international disequilibrium. Prerequisite: Economics 13 or 205. *Three semester hours.* Mr. Suh.

207b. INTERNATIONAL ECONOMIC POLICY.

A review of the rise of the world trading economy, techniques of commercial policy, and major questions of international economic policy. Prerequisite: Economics 207a. *Three semester hours.* Mr. Michalopoulos.

22a. LABOR ECONOMICS.

A survey of the nature of labor economics and labor problems, including the several approaches of organized workers and employers to these problems. *Four semester hours.* Mr. Melder.

23b. PROBLEMS IN MONEY AND BANKING.

Central banks, particularly the Federal Reserve System; monetary standards; theories of foreign exchange; monetary policy in the United States. Prerequisite: Economics 13a or its equivalent. *Three semester hours.* Mr. Savage.

24b. HISTORY OF ECONOMIC DOCTRINE.

After a quick survey of ancient writers, attention will be given to mercantilism and the doctrinal reaction from it as expressed by the Physiocrats and the Classical economists. *Three semester hours each semester.* Mr. Nicholson.

25b. PROBLEMS IN PUBLIC FINANCE.

The Employment Act of 1946 is discussed and methods by which it may be implemented. Other questions examined are: reform of the federal taxation, federal debt policy, the capital budget, federal budgetary procedure. Prerequisite: Economics 15a or its equivalent. *Three semester hours.* Mr. Bryce.

26a. INDUSTRIAL ORGANIZATION AND GOVERNMENT CONTROL.

Examination of the various forms of governmental regulation applied to our present industrial organization. Appraisal of existing governmental controls in specific industrial situations. *Three semester hours.* Mr. Nicholson.

26b. PROBLEMS IN INDUSTRIAL ORGANIZATION.

Problems of market organization, behavior, and public policy. Conducted on a seminar basis. *Three semester hours.* Mr. Nicholson.

271. INTRODUCTION TO MATHEMATICAL ECONOMICS.

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Prerequisite: consent of the instructor. *Three semester hours each semester.* Mr. Nicholson.

272b. MATHEMATICAL ECONOMICS.

Mathematical approach to Microeconomic Theory including general equilibrium. Intended for advanced undergraduate students with some knowledge of calculus and linear algebra. This course may be taken in lieu of Economics 205a. Prerequisite: Consent of instructor. *Three semester hours.* Mr. Suh.

277a. REGIONAL ECONOMICS.

Theoretical and practical aspects of economic development, cyclical changes and trade between regions of the United States. Location theory, growth trends, wage and income differentials, structural unemployment and inequalities in income distribution are considered. Interregional input-output tables emphasized. Prerequisite: Economics 11, or one advanced economics course. *Three semester hours.* Mr. Puffer.

278b. NATIONAL AND REGIONAL PLANNING.

Theory, method and experience of planning. Development planning is examined at both the national and regional levels with emphasis placed on the problems of harmonizing regional with national objectives. Prerequisite: 277a. *Three semester hours.*

Mr. Michalopoulos.

281. SENIOR HONORS.

Three semester hours each semester.

Staff.

280b. JUNIOR HONORS SEMINAR.

Designed to assist honors candidates in integration of the field. Prerequisite for honors. *Three semester hours.* Mr. Van Tassel.

290a. ECONOMETRICS.

The application of statistical inference to the verification of economic postulates and problems. Topics considered are: classical least-squares, autocorrelation, matrix algebra, simultaneous equation estimating techniques, factor analysis, input-output matrices and decision theory. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Puffer.

290b. PROBLEMS IN QUANTITATIVE ECONOMICS.

Study of the application of mathematical and statistical techniques to economic problems. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Puffer.

301a. ECONOMIC THEORY, MICRO-ECONOMICS.

Theory of consumer behavior, theory of production and costs, elements of linear programming, theory of market relationships. Prerequisite: Consent of instructor. *Three semester hours.* Mr. Michalopoulos.

301b. ECONOMIC THEORY, MICRO-ECONOMIC PROBLEMS.

Pricing of factors, theory of income distribution—profits, rents, interest, welfare economics, general equilibrium theory, input-output analysis, principles of micro-economic dynamics. Prerequisite: Consent of instructor. *Three semester hours.*

Mr. Suh and Mr. Michalopoulos.

302a. ECONOMIC THEORY—MACRO.

Income and employment theory. A study of the variables of macroeconomics. The pre-Keynesian and Keynesian aggregative systems. Prerequisite: Consent of instructor. *Three semester hours.* Mr. Savage.

302b. ECONOMIC THEORY—MACRO ECONOMIC PROBLEMS.

Mathematical and econometric models of the economic system, business cycles and forecasting and macroeconomic public policy. Prerequisite: Consent of instructor. *Three semester hours.* Mr. Puffer.

313a. MONEY AND BANKING THEORY.

The process of money creation and money flows; an analysis of the monetary and banking system, money and capital markets, and the role of financial intermediaries; analysis of monetary policy instruments and their effectiveness; competing objectives of monetary policy; relation of these objectives to fiscal policy, debt management, and economic growth. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Savage.

325. SEMINAR IN PUBLIC FINANCE.

A study of the theory of public finance, fiscal policy, institutional arrangements, and policy problems. Prerequisite: consent of instructor. *Three semester hours.* Mr. Bryce.

327. INTERNATIONAL TRADE THEORY.

The theory of international trade and finance. Problems in international economics with particular attention on international finance. Prerequisite: consent of instructor. *Three semester hours each semester.* Mr. Van Tassel and Mr. Michalopoulos.

300. READING }
30. THESIS } IN ECONOMIC GROWTH.

Mr. Melder.

31. THESIS: IN MONEY AND BANKING.

Mr. Savage.

322. READING }
32. THESIS } IN LABOR.

Mr. Melder.

34. THESIS: IN PUBLIC FINANCE AND FISCAL POLICY.

Mr. Bryce.

326. READING }
35. THESIS } IN BUSINESS ORGANIZATION AND GOVERNMENT
CONTROL OF INDUSTRY.

Mr. Nicholson.

36. THESIS: IN INTERNATIONAL ECONOMICS.

Mr. Van Tassel.

329. READING }
37. THESIS } IN STATISTICAL METHODS.

Mr. Nicholson.

334. READING }
38. THESIS } IN HISTORY OF ECONOMIC THOUGHT.

Mr. Nicholson.

339. READING }
320. THESIS } IN ECONOMIC THEORY.

Staff.

Education

DEPARTMENT FACULTY

William C. Kvaraceus, Ed.D., *Professor of Education and Sociology, Department Chairman*

Helen J. Kenney, Ed.D., *Associate Professor of Education*

Richard J. Gordon, Ph.D., *Assistant Professor of Education*

Arthur M. Kroll, Ed.D., *Assistant Professor of Education*

Karen C. Cohen, Ph.D., *Assistant Professor of Education*

Spencer R. Potter, Ed.D., *Assistant Professor of Education*

Marcia A. Savage, Ed.D., *Assistant Professor of Education*

William E. Topkin, Ed.D., *Assistant Professor of Education*

With the cooperation of Professor Reid of the Department of Romance Languages, Professor Warman of the Department of Geography, and Mrs. Ball, Instructor in Education and Guidance Counselor. Professor Vogel of the Department of Psychology, and Visiting Lecturers.

UNDERGRADUATE PROGRAM

The department encourages all students who may be interested in preparing for careers in education to consult with some member of its staff early in their careers at the University. The actual election of courses in education, however, should be postponed until the junior year. During the first two years, students should complete as many of the specific requirements for the degree of Bachelor of Arts as possible, and lay a broad foundation of scholarship in the subjects in which they wish to specialize.

In conformity with its policy of emphasizing the importance of scholarly background, the department offers its courses as electives, and not as undergraduate majors.

GRADUATE PROGRAM

The department offers one program leading to the degree of Master of Arts in Education and another leading to the degree of Doctor of Education.

Master of Arts in Education: For graduate students wishing to prepare for teaching and/or guidance in public or private secondary or elementary schools, the department offers a fifth-year program leading to the degree of Master of Arts in Education.

Admission Requirements: In addition to the general admission requirements to the Graduate School, a personal interview is usually required by the Department of Education.

Programs Available: Three programs leading to the degree of Master of Arts in Education are available:

1. A full or part time program in teacher preparation for students with a bachelor's degree and strong academic background. Superior students may complete this program in one year. It includes appreciable advanced work in the academic fields and internship experiences.
2. A program in counselor education, full or part-time.
3. A study-teach program in cooperation with the Department of Romance Languages, involving instruction in beginning college courses. This is a two-year program in

which the student typically receives a Teaching Assistant Scholarship involving remission of tuition and a cash stipend; the intern devotes half-time to supervised teaching and other service to the Department of Romance Languages. In light of the extensive internship teaching experience, the number of courses in education may be reduced to equal that in the subject matter field. The assisting or teaching is a part of the requirements of all students in T.A.S. Program. As part of the study of Romance languages and literature, the departments look with favor on study abroad for at least one summer, but this is not a requirement.

Course Requirements. For further details on course requirements, consult the Department of Education.

Internships. The department provides opportunities for internship experience under supervision for all graduate students. For graduate students who have not had teaching experience, satisfactory work in internship teaching is a requirement for the degree of Master of Arts in Education.

Thesis or Additional Study in Lieu of Thesis. All candidates for the degree of Master of Arts in Education must choose one of the following plans:

- (a) Prepare an acceptable thesis.
- (b) Elect, in lieu of thesis, two additional semester courses.
- (c) Elect, in lieu of thesis, a seminar in which intensive work will be required in preparing and presenting reports before fellow graduate students and a member of the staff.

Final oral examination. The passing of a final oral examination will be required of all candidates.

Doctor of Education: The program for the degree of Doctor of Education was established in 1962 with special emphases on educational psychology, guidance and counseling. The requirements for this degree will closely parallel the requirements for the Doctor of Philosophy degree, as outlined in the catalog section on the Graduate School. Applicants for admission to the program will be expected to give evidence of high scholarly achievement, including results of the Graduate Record Examination. In special cases, foreign students may be excused from the Graduate Record Examination requirement. Applications for this degree are suspended for the current academic year, pending completion of a curriculum review by the Department.

COURSES

200. GEOGRAPHY IN EDUCATION.

Refer to description under Geography 200a and b. *Three semester hours each semester.*

Mr. Warman.

201a. EDUCATIONAL PSYCHOLOGY: CHILD GROWTH AND DEVELOPMENT.

Principles of child development, with emphasis upon maturation, learning and personal-ity development in the elementary school years. *Three semester hours.*

Miss Savage and Miss Kenney.

201b. EDUCATIONAL PSYCHOLOGY: ADOLESCENT GROWTH AND DEVELOPMENT.

Principles of adolescent development with special emphasis upon learning and personal-ity development in the secondary school years. *Three semester hours.*

Miss Savage and Miss Kenney.

203b. CURRICULUM DEVELOPMENT IN SECONDARY EDUCATION.

The basic objectives, issues, principles and procedures of curriculum organization and development in secondary schools, including the organization of learning experiences in reference to developmental and subject-matter sequences. Admission on consent of the Department. *Three semester hours.* (Offered in Evening College) Mr. Gordon.

205a. THE SOCIOLOGY OF THE SCHOOL.

A study of social forces and their relations to the school as a stabilizing agent and as an agent of change. *Three semester hours.* Mr. Kvaraceus.

208a. METHODS AND MATERIALS IN SECONDARY EDUCATION.

Methods and techniques used by the teacher in junior and senior high school teaching, and a survey of materials available. Admission on consent of the Department. Three hours each week. *Three semester hours.* Mr. Gordon.

209b. INTRODUCTION TO AMERICAN EDUCATION. (THE AMERICAN SCHOOL)

A comprehensive and systematic study of American Education, with emphasis on recent innovations, the role of the states and the Federal Government in Education, the structure and organization of the schools, and the status of teachers, intended for prospective and in-service teachers and others with an interest in American Education. *Three semester hours.* Mr. Gordon.

215a.b. INTERNSHIP TEACHING IN THE ELEMENTARY SCHOOL. (OFFERED BY EVENING COLLEGE)

An intensive period of observation and practice in teaching under supervision in regularly organized classes. Each student is assigned to a supervising teacher, under whom he or she works for 180 hours during the semester. Admission on consent of the Department. *Six semester hours.* Staff, and Supervising Teachers.

216a.b. SEMINAR ON INTERNSHIP TEACHING. (OFFERED BY EVENING COLLEGE)

Education 215a.b. and 216a.b. should be taken simultaneously. *Two semester hours.* Staff.

217a.b. INTERNSHIP TEACHING IN THE SECONDARY SCHOOL.

An intensive period of observation and teaching in the field or fields in which the student plans to teach. Individual supervision is given by the department and by critic teachers in co-operating schools. Admission on consent of the Department. *Six semester hours.* Mr. Gordon, Mr. Potter, and Supervising Teachers.

218a.b. SEMINAR ON INTERNSHIP TEACHING IN SECONDARY SCHOOL.

Education 217a.b. and 218a.b. should be taken simultaneously. *Two semester hours.*

Mr. Gordon.

221. INTERNSHIP TEACHING IN MUSIC.

Consent of Music Department required.

230b. PSYCHO-SOCIAL DEVELOPMENT OF ADOLESCENTS IN EDUCATIONAL SETTINGS.

Class limited to 15. Permission of the instructor required. *Three semester hours.*

Miss Savage.

260b. CURRICULUM DEVELOPMENT IN ELEMENTARY EDUCATION.

See Evening College Bulletin.

263a. METHODS AND MATERIALS IN TEACHING IN THE ELEMENTARY SCHOOL.
See Evening College Bulletin.

270. (ROMANCE LANGUAGES 270) THE TEACHING OF ROMANCE LANGUAGES.

A practicum course for Teaching Assistant Scholars serving as first-year Interns in the Department of Romance Languages. This course will include a weekly lecture and readings, to provide a basis in the theory of applied linguistics; directed teaching in language courses; and a semi-monthly seminar for discussion of the relations between theory and practice. *Three semester hours each semester.* Mr. Reid and Staff.

271. (ROMANCE LANGUAGES 271) THE TEACHING OF ROMANCE LANGUAGES—ADVANCED.

A continuation of course 270 for second-year Interns. *Three semester hours each semester.* Mr. Reid and Staff.

276b. EDUCATING DEPRIVED AND DENIED CHILDREN AND YOUTH.

Considers critical issues in educating disadvantaged children from the core city and rural areas with special implications for school planning and teaching. *Three semester hours.*

Mr. Kvaraceus and Miss Kenny.

280b. JUVENILE DELINQUENCY AND THE SCHOOL.

Considers the role of the school as a central agency in the prevention and control of norm-violating behavior. *Three semester hours.* Mr. Kvaraceus.

290b. PHILOSOPHY OF EDUCATION.

The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems. *Three semester hours.* Mr. Topkin.

305b. GROUP PROCESSES IN EDUCATION.

A study of group phenomena with emphasis upon the small group in teaching and counseling. *Three semester hours.* Mr. Buckley.

307a. PERSONALITY THEORIES IN EDUCATION.

Comparative analysis of theoretical approaches to understanding personality. Considers implications of psychoanalytic, learning/behaviorist, and self theories for education. *Three semester hours.* Mr. Kroll.

307b. PERSONALITY DEVELOPMENT IN EDUCATION.

Considers primary determinants and elements of personality, including cultural differences, child-rearing practices, school experience, assessment, creativity, and personality disorder. *Three semester hours.* Mr. Kroll.

311a. PRINCIPLES, PRACTICES, AND ORGANIZATION OF GUIDANCE.

Principles bearing upon guidance and student personnel practices will be developed. Aspects of related fields will be reviewed sufficiently to indicate the scope and content of guidance and personnel work. The problem of organizing and administering a guidance program will form an important part of this course. *Three semester hours.* Mr. Potter.

312a. GUIDANCE: COUNSELING.

Emphasis will be upon the theory and methodology of counseling and upon the management of typical counseling problems. The diagnosis and referral of behavior disorders and related personality maladjustments will be considered. Case material will be presented and analyzed. (311a must be taken simultaneously or have been taken previously.) *Three semester hours.* Mr. Topkin.

312b. VOCATIONAL THEORY, INFORMATIONAL SERVICES AND PLACEMENT.

This course deals with three areas: (1) a review of vocational theory; (2) the use of informational services relevant to educational and vocational counseling; (3) placement.
Three semester hours. Mrs. Ball.

314a. TESTS AND EVALUATION.

The methods and problems involved in the evaluation of abilities, interests and achievement of children and youth. Attention will be given both to standardized instruments and to teacher-made tests of achievement. *Three semester hours.*

Mr. Kvaraceus and Miss Kenney.

314b. TESTS AND EVALUATION: ADVANCED PROBLEMS.

The measurement and evaluation of aptitudes, attitudes, and personality with attention to the use of such measures in teaching and counseling. *Three semester hours.*

Mr. Kvaraceus and Miss Kenney.

316a. ABNORMAL PERSONALITY IN PROBLEMS OF EDUCATION AND GUIDANCE.

Three semester hours.

Mr. Vogel.

317a. INDIVIDUAL ASSESSMENT OF MENTAL ABILITIES.

Three semester hours.

Mrs. Salzer and Miss Moosey.

319a. STATISTICAL METHODS IN EDUCATIONAL EVALUATION AND RESEARCH, I.

Three semester hours.

Staff.

319b. STATISTICAL METHODS IN EDUCATIONAL EVALUATION AND RESEARCH, II.

Three semester hours.

Staff.

321a. EDUCATIONAL RESEARCH DESIGN AND METHODOLOGY, I.

Three semester hours.

Mrs. Cohen.

321b. EDUCATIONAL RESEARCH DESIGN AND METHODOLOGY, II.

Prerequisite: 321a or its equivalent. *Three semester hours.*

Mrs. Cohen.

322b. PRACTICUM IN GUIDANCE.

Three semester hours.

Mrs. Ball.

326. ADVANCED PRACTICUM IN GUIDANCE AND COUNSELING.

Three semester hours each semester.

Staff.

330 Sem: Soc & Edu

350. RESEARCH IN EDUCATION.

Individual direction of students in their research projects. *Three semester hours each semester.*

Staff.

380b. DEPARTMENTAL SEMINAR ON CURRENT PROBLEMS.

Three semester hours.

Staff.

GRADUATE READINGS AND THESIS COURSES

38. } DIRECTED READINGS IN EDUCATIONAL PSYCHOLOGY.

381. } THESIS.

Staff.

39. } DIRECTED READINGS IN COUNSELING.

391. } THESIS.

Staff.

English

DEPARTMENT FACULTY

William H. Carter, Jr., Ph.D., *Professor of English, Department Chairman*

Karl O. E. Anderson, Ph.D., *Professor of English*

James F. Beard, Jr., Ph.D., *Professor of English*

James Macris, Ph.D., *Professor of English*

Stanley Sultan, Ph.D., *Professor of English*

Charles S. Blinderman, Ph.D., *Associate Professor of English*

Jessie C. Cunningham, A.M., *Associate Professor of English*

Neil R. Schroeder, Ph.D., *Associate Professor of English**

Robert A. Barakat, M.A., *Assistant Professor of English*

Serena S. Hilsinger, Ph.D., *Assistant Professor of English*

*On leave of absence, second semester, 1968-69.

UNDERGRADUATE PROGRAM

English 10a or b, Introduction to Literature, is a prerequisite for all other literature courses in the English Department. All year-courses in English are divisible.

An undergraduate major in English and American Literature is expected to acquire a liberal education with a broad background in the arts and sciences. To do so, he should become familiar with several fields in the humanities, the social sciences, mathematics, and the sciences; and insofar as is possible he should attempt to achieve depth in at least one area outside his major field. At each registration period, the student should discuss his program with his adviser.

The English major must take a minimum of thirty hours in literature courses, not counting English 12, 16, 17, 18, and 19. In addition, he must take a minimum of twenty hours of related courses in other fields, as specified under *Related Courses* below. No student is permitted to take *more* than eighty-four hours in his major and related fields.

Literature Courses. The minimum thirty hours of literature courses required of the English major must include the following:

1. English 10a or b, taken preferably in the freshman year and no later than the sophomore year.
2. English 13a or b, preferably taken no later than the sophomore year.
3. Either English 14 or English 15, normally taken before the senior year.
4. A minimum of twelve hours in courses or seminars at the 200 level. English 250 and 260b may be taken in partial fulfillment of this requirement.

To make sure that students develop some historical perspective and an awareness of the range and variety of English and American literature, all English majors must include in their programs at least:

- a. three semester-courses dealing with literature written before 1700: English 15a, 112b, 201a, 202b, 204, and 213.
- b. three semester-courses dealing with literature written from 1700 to 1900: English 14, 15b, 111, 205, 210, and 217.

Several English seminars also meet this requirement, depending on the subjects. Since the topics for seminars vary from year to year, the seminars fulfilling either half of this requirement cannot be listed here by name.

Courses in Foreign Literature. Of the courses listed under "Comparative Literature" and "Theatre Art," Comparative Literature 18 and 19, English 127b, English 245b, Theatre Art 153a, and up to six hours of the following—German 197a, German 199, Russian 179, Russian 180—may be counted towards the English major.

Related Courses. The minimum twenty hours of related courses required of the English major must include the following:

1. Six or more hours of History, especially courses in English and American history.
2. Six or more hours of Philosophy.
3. Any selection from the following, but the student should endeavor to take courses from as many different fields as are necessary to give him the breadth to make his major meaningful and comprehensive:
 - a. Civilization Courses: Classics 123a and 123b, French 113, and German 141.
 - b. Fine Arts, with the exception of studio courses.
 - c. Linguistics 115.
 - d. Music.
 - e. Theatre Art (with the exception of Theatre Art 153a, which may be counted as a literature course in the English major).

As long as the student fulfills the requirements specified above, he is entitled to elect any combination of courses ranging from fifty to eighty-four semester hours in his major and related fields.

Courses Recommended Outside the Major and Related Fields

Like all undergraduates, the English major must elect at least thirty-six hours of courses *outside* his major and its related fields. These courses must be selected from the offerings of the following Departments: Biology, Chemistry, Economics, Education, Geography, Geology, German, Government and International Relations, Mathematics, Physics, Psychology, Romance Languages, Russian, Sociology. The following courses are especially recommended:

- a. Government 14, 15, and 254.
- b. Psychology 12b, 103b, 170b, 172a, 202a, and 209a and b.
- c. Sociology 12a, 13b, 14a, 15, and 24b.
- d. *Science and Mathematics.* Inasmuch as courses in science and mathematics give the student experience in areas of learning which have crucial influence on contemporary culture, every English major is strongly urged to take at least one year course in mathematics and one in science.
- e. *Foreign Languages.* Every English major is strongly advised to acquire proficiency in at least one foreign language. In addition, those students who intend to go on to graduate school should be aware that a reading knowledge of French, German, and Latin is frequently required of doctoral candidates.

Honors Program. Qualified students may apply in the spring of their sophomore year to participate in the three-semester Honors Program in English. Honors Candidates take the Junior Honors Seminar in the second semester of their junior year; in the first semester of the senior year, they take a reading course, beginning work on their Honors

Thesis and preparing for the examinations—written and oral—which are given at the end of the semester; in the second semester of the senior year, they complete the writing of the thesis.

Cooperative Programs. The range of course offerings open to majors is being extended by the establishment of a cooperative arrangement with the English Departments at Assumption College and the College of the Holy Cross. With the permission of the Department, junior and senior majors may take a few carefully selected courses in literature and linguistics at these institutions. Another consortium program that may be of interest to English majors is listed under "Theatre Art"; only Theatre Art 153a may be counted as a literature course in the English major.

GRADUATE PROGRAM

The University offers a program leading to the Master of Arts degree in English. A limited number of scholarships providing tuition remission are available for superior students. The department also offers several teaching assistantships, involving half-time teaching and half-time study, with a stipend up to \$2200 plus the remission of tuition.

For the Master of Arts, the student must satisfactorily complete at least 30 semester hours of work, including English 300a (Introduction to Graduate Studies), English 250a (English Language), and at least one seminar. He must also write an acceptable master's thesis (which, with an associated reading course, may count up to 6 of the required 30 semester hours), and he must pass a written Foreign Language Examination (in Greek, Latin, French, German, Italian, Russian, Spanish, or another foreign language approved by the Department).

COURSES

F10a and b. INTRODUCTION TO LITERATURE.

This course deals with the problems common to all the literary genres—such as the handling of diction, imagery, point of view, tone, and structure—but each section has its own set of readings focused on a particular concept or theme. Students will be permitted to make their own choices of section as far as possible. Offered both semesters. *Three semester hours.* Staff.

F12b. SPEECH.

Not offered, 1968-69.

A fundamental course in public speaking which concentrates on practical experience in the most common types of speeches. Enrollment limited to fifteen students. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Schroeder.

13a and b. INTRODUCTION TO POETRY.

A course introducing the student to a variety of critical approaches to poetry and affording extensive experience in reading, discussing and writing about individual poems. Attention is given to as many as possible of the chief kinds, functions and values of poetry. Offered both semesters. *Three semester hours.* Mr. Carter, Mrs. Hilsinger.

14. ENGLISH NOVEL.

A study of the English novel from its beginning to the end of the nineteenth century. The first semester includes Defoe, Richardson, Fielding, Smollett, Sterne, Jane Austen, and three or four minor novelists. The second semester considers Scott, Thackeray, Dickens, George Eliot, James, Hardy, Conrad, and two or three minor novelists. Some emphasis is placed on the development of the novel as a literary form. *Three semester hours each semester.* Mrs. Cunningham.

15. ENGLISH DRAMA.

A course in the major periods of drama in the English language. The first semester covers medieval religious drama and the drama of Tudor, Stuart, and Restoration England. The second semester covers eighteenth and nineteenth century English drama and modern drama in England, Ireland and the United States. *Three semester hours each semester.*

First semester: Mr. Schroeder. Second semester: Mr. Sultan.

16b. CREATIVE WRITING.

A course designed to cultivate and guide student work in the short story, the lyric poem, and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Prerequisite: a one-semester course in literature. *Three semester hours.*

Mr. Sultan.

17b. CREATIVE WRITING: SECOND COURSE.

Not offered, 1968-69.

Open to students who have taken English 16b and to other students interested in writing verse. Prerequisite the same as for English 16b. *Three semester hours.*

Mr. Sultan.

F18a and b. EXPOSITORY WRITING.

This course is designed to help students improve their expository writing through the study and application of rhetorical methods. Diction, sentence structure, paragraph integrity, theme organization, logic, semantics, persuasion, the relationship of idea to expression and of expression to audience are among the matters analyzed. Offered both semesters. *Three semester hours.*

Staff

19b. INTERMEDIATE COMPOSITION.

Not offered, 1968-69.

This course is designed to help those who have already acquired competence in expository writing to improve their style and effectiveness through practical experience. Special emphasis will be placed on stylistics, techniques of persuasion, and methods of organization through the study of works of established essayists and the close analysis of student papers. Enrollment limited to fifteen students. Prerequisite: English 11 (discontinued) or English 18 (formerly English 19) and consent of the instructor. *Three semester hours.*

Staff.

111. AMERICAN LITERATURE.

Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the present. Authors read during the first semester include Sewall, Edwards, Franklin, Cooper, Poe, Hawthorne, Thoreau, Emerson, Melville and Whitman; during the second semester, Twain, Howells, Dickinson, Adams, Crane, James, Frost, Eliot, Faulkner and Hemingway. *Three semester hours each semester.*

Mr. Beard.

112b. ELIZABETHAN NON-DRAMATIC LITERATURE.

Not offered, 1968-69.

Elizabethan prose and poetry, excluding drama, will be considered in their cultural, intellectual, and literary context. Special attention will be devoted to the works of Sidney, Spenser, Shakespeare, Jonson and Donne; but many minor figures (Wyatt, Surrey, Nashe, Lyly, Greene, etc.) will also be considered. Offered at the discretion of the department. *Three semester hours.*

127b. MODERN CONTINENTAL DRAMA.

A survey of the drama of continental Europe, excluding England, from Ibsen to the

present. Special emphasis will be given to the major figures, including Ibsen, Strindberg, Chekhov, Pirandello and Brecht. Offered in alternate years. *Three semester hours.*

Mr. Schroeder.

143b. MODERN BRITISH FICTION.

The course deals primarily with the work of four twentieth century British writers of fiction: Joyce, Lawrence, Woolf and Durrell. *Three semester hours.*

Mrs. Hilsinger.

144a. CONTEMPORARY AMERICAN FICTION.

A critical introduction to the best American fiction since about 1900, with emphasis on its aesthetic values, sociological insights, and philosophical implications. Authors read include Dreiser, James, Anderson, Fitzgerald, Hemingway, Wolfe, Faulkner and Mailer. *Three semester hours.*

Mr. Beard.

150a. LITERATURE OF WESTERN CIVILIZATION.

A study of literature basic to the cultural development of western civilization; selections range in subject from mythology to political science, in type from the epic poem to the essay, and in time from Greek antiquity to the Renaissance. *Three semester hours.*

Mr. Blinderman.

155b. JUNIOR HONORS SEMINAR.

Restricted to juniors who are candidates for honors in English. The purpose of the seminar is to prepare the student for the advanced independent study of literature. Such subjects as the definition of genres, the nature of metaphor, and critical approaches to literature are studied. *Four semester hours.*

Mrs. Hilsinger.

156. HONORS IN ENGLISH: SENIOR YEAR.

Three semester hours each semester.

Staff.

201a. CHAUCER.

An introduction to Middle English grammar, pronunciation, and scansion, and a study of *Troilus and Criseide* and the best of the *Canterbury Tales*, followed by a more rapid reading of at least three of Chaucer's earlier works, such as *The Book of the Duchess*, *The House of Fame*, *The Parliament of Fowls*, and *The Legend of Good Women*. *Four semester hours.*

Mr. Anderson.

202b. MEDIEVAL LITERATURE.

A study of the literature of Western Europe before 1500. The works read include epics such as *Beowulf*, *The Song of Roland*, *The Nibelungenlied*, and the *Njal's Saga*; historical writings and folk tales important in the development of the Arthur story; romances such as *Perceval*, *Tristan and Isolde*, and *Gawain and the Green Knight*; Dante's *Divine Comedy*; *Inferno*; selections from Chaucer's *Canterbury Tales*. *Four semester hours.*

Mr. Anderson.

204a. SEVENTEENTH CENTURY.

Not offered, 1968-69.

A survey of selected Metaphysical and Cavalier poets, masterpieces of seventeenth century prose, and the rise of English neo-classicism. Offered in alternate years. *Four semester hours.*

Mr. Carter.

204b. SEMINAR: MILTON.

Not offered, 1968-69.

An intensive reading of Milton's poems and selected prose. Offered in alternate years. Prerequisite: Consent of the instructor. *Four semester hours.*

Mr. Carter.

205. EIGHTEENTH CENTURY.

During the first semester, prose works such as Defoe's *Moll Flanders* and Swift's *Gulliver's Travels*, plays such as Gay's *Beggar's Opera* and Lillo's *London Merchant*, and the major poems of Pope and Swift are considered. During the second semester, prose works by Boswell and Johnson; novels by Richardson, Fielding, Smollet, Sterne; plays by Fielding, Goldsmith, Sheridan; and poetry by Thomson, Collins, Gray, Burns and Blake are studied. Offered in alternate years. *Four semester hours each semester.* Mr. Carter.

206a. SEMINAR: SPECIAL STUDIES IN RENAISSANCE DRAMA.

A seminar devoted to the intensive study of a small group of dramatists or a special dramatic problem of the Renaissance. Topic for 1968-69: Marlowe and Jonson. Prerequisite: consent of the instructor. Offered at the discretion of the Department. *Four semester hours.* Mr. Schroeder.

207b. SEMINAR: THE CONCEPT OF TRAGEDY.

Not offered, 1968-69.

Through the study of approximately twenty plays, three novels, and a number of poems, from the Greek and Hebrew origins of Western Culture to the present time, this course analyzes the nature of tragedy, the changes which this concept has undergone, the relation of these changes to shifting views of man and the universe, and the significance of the study of tragedy to us today. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Anderson.

210. VICTORIAN LITERATURE.

A survey of Victorian literature through the major movements and figures. In the first semester, Carlyle, Macauley, Mill and Newman are studied as representative spokesmen of prevailing ideological movements, such as Transcendentalism, Utilitarianism, Anglo-Catholicism; Tennyson and Browning are the major poets studied. In the second semester, the movements include Darwinism, Aestheticism and Imperialism; Huxley, Arnold, Pater, Ruskin, Wilde and Hardy are among the authors read. Offered in alternate years. *Four semester hours each semester.* Mr. Blinderman.

212a. SEMINAR: AMERICAN LITERARY RENAISSANCE.

This course will explore characteristic writings of Emerson, Thoreau, Hawthorne, Melville, and Whitman; consider their personal and literary interrelations; and seek to evaluate their artistic and cultural influences in the larger context of American society. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Beard.

213. SHAKESPEARE.

Approximately twenty plays, with supplementary critical essays, are read through the year as a basis for a study of Shakespeare's development as a dramatist and his changing attitude toward life. The second semester is devoted mainly to a careful analysis of *Hamlet*, *Othello*, *Lear*, *Macbeth* and *Antony and Cleopatra*. *Four semester hours each semester.* Mr. Anderson.

214b. ENGLISH SEMINAR: DARWINISM.

This seminar, of an interdisciplinary nature, is devoted to the study of original and research materials elucidating the scientific, philosophical, religious and social dimensions of Darwinism. The course examines chiefly the survival of the fittest Darwinian ideas in English and American literature. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Blinderman.

217. LITERATURE OF THE ROMANTIC PERIOD.

Not offered, 1968-69.

The first semester includes reading of prose works (essays and a Gothic novel), study of eighteenth century predecessors of the Romantic Movement, and exposure to background information; emphasis is placed upon the major poetry of the major Romantic poets: Blake, Coleridge, Wordsworth, Byron, Shelley, and Keats. The second semester will involve an investigation of Romantic Theory and a study of Continental and American Romantic Literature. Offered in alternate years. *Four semester hours each semester.*

Mr. Blinderman.

218b. SEMINAR: WILLIAM BLAKE.

An analysis of the poems and of a selection of the Prophetic Books of Blake, including some consideration of Blake as graphic artist. Offered at the discretion of the department. Prerequisite: consent of the instructor. *Four semester hours.*

Mr. Carter.

220a. TWENTIETH-CENTURY POETRY.

A survey, with special attention to the genesis and development of modernism and to tendencies during the last few years toward a dominant new movement in English poetry. The works of almost fifty poets, ranging in time from Emily Dickinson to Robert Creeley, are considered. Offered in alternate years. *Four semester hours.*

Mr. Sultan.

222a. SEMINAR: FIVE TWENTIETH-CENTURY POETS.

Not offered, 1968-69.

A seminar in the lyric poetry of Yeats, Pound, Eliot, Auden and Thomas, for students who have taken English 220a or the equivalent. Offered in alternate years. Prerequisite: consent of the instructor. *Four semester hours.*

Mr. Sultan.

225b. SEMINAR: TWENTIETH CENTURY AMERICAN LITERATURE.

The course will include readings and discussions of a significant group of twentieth century American writers, O'Neill, Eliot, Robinson, Frost, Hemingway, Faulkner, and Stevens, as artists and as representatives of tendencies and influences in American civilization. Prerequisite: consent of the instructor. *Four semester hours.*

Mr. Beard.

230b. SEMINAR: THE BRONTËS AND HARDY.

A study of selected poetry and fiction of Charlotte, Emily and Anne Brontë and of Thomas Hardy: their dramatic affinities, their cosmic vision, their literary techniques. Offered at the discretion of the Department. Prerequisite: consent of the instructor. *Four semester hours.*

Mrs. Cunningham.

231a. SEMINAR: THE IRISH LITERARY REVIVAL.

Not offered, 1968-69.

A course in the inception, development and effect of the literary movement during the end of the last century and first decades of this one that created an Irish literature in English. Writers studied include Yeats, Joyce, Synge and O'Casey. The cultural, historical and political backgrounds of Anglo-Irish literature are also studied. Offered at the discretion of the department. Prerequisite: consent of the instructor. *Four semester hours.*

Mr. Sultan.

232a. SEMINAR: CONRAD, LAWRENCE AND JOYCE.

This course deals with the development and accomplishment in the genres of the short story and the novel of three major writers of fiction of the twentieth century. Offered at the discretion of the Department. Prerequisite: consent of the instructor. *Four semester hours.*

Mr. Sultan.

245b. MODERN CONTINENTAL FICTION.

Masterpieces by modern European novelists (Flaubert, Turgenev, Tolstoy, Dostoyevsky, Gide, Proust, Mann, Kafka and Camus) are studied in translation, with special attention to their formal philosophical, moral, social, political, and psychological values. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Beard.

250. HISTORY OF THE ENGLISH LANGUAGE.

The first semester deals with the development of the phonology and lexicon of English, viewed as a dynamic series of systems. The course also describes the homeland, language, and culture of the Proto-Indo-Europeans as background for a treatment of the structural relationships between English and the other languages of the Indo-European family. The second semester concentrates on the development of the grammar of English, also treated dynamically and systemically. The course includes an analysis of the establishment of Standard British English, the doctrine of correctness, and the growth of Modern American English in its sociocultural setting. Prerequisite: consent of the instructor. *Four semester hours each semester.* Mr. Macris.

260b. SEMINAR: MODERN AMERICAN ENGLISH.

This seminar analyzes the grammatical structure of Modern American English. It concentrates on an evaluational system for handling spoken and written English and the application of this system to problems of current English usage. The relevance of linguistic theory and methodology to the teaching of English receives special attention. Prerequisite: consent of the instructor. *Four semester hours.* Mr. Macris.

300a. INTRODUCTION TO GRADUATE STUDIES.

This course is devoted to an intensive general study of the three principal areas in the discipline—bibliography and textual analysis, literary history, and literary criticism—and to the relationships among them. In the study of literary criticism, alternative theoretical approaches and applications of them are examined. *Four semester hours.* Mr. Sultan.

301b. SEMINAR: CHAUCER.

A detailed study of selected problems of interpretation and evaluation, with wide reading in critical material and general background. Independent and original study is emphasized. Prerequisite: English 201a. *Four semester hours.* Mr. Anderson.

GRADUATE READING AND THESIS COURSES

31. } READING COURSE.
310. } MASTER'S THESIS.

Staff.

Fine Arts

DEPARTMENT FACULTY

Samuel P. Cowardin, III, Ph.D., *Associate Professor of Fine Arts,
Department Chairman*
Sante Graziani, M.F.A., *Associate Professor (affiliate) of Fine Arts*
John T. Murphey, B.S. in Ed., *Assistant Professor of Fine Arts*

UNDERGRADUATE PROGRAM

The department offers a selection of courses designed to foster understanding and sensitivity in the visual arts through direct contact with the materials of art or the study of artistic achievement in a variety of areas and historical periods.

The major in Fine Arts is offered in conjunction with the School of the Worcester Art Museum. All advanced studio courses at the museum are designated below as Fine Arts 199 and are described in the catalog of the School of the Worcester Art Museum. These courses are ordinarily open only to students majoring in Fine Arts.

The major comprises at least 36 hours of studio work at the museum, plus Fine Arts 11 and six additional hours chosen from one or more of the following areas: History 10, Music, Philosophy 16a (Esthetics), and Psychology 11. To meet the requirements for the bachelor's degree, all majors must satisfactorily complete 36 hours outside of courses in studio art and art history; European civilization (French, German, Classical); Music; History 10; Literature; Philosophy 16a; and Psychology 11. No more than 60 hours in studio courses may normally be counted, and at least 30 hours must be taken in courses at Clark University.

At the time of application for admission to Clark, every candidate who plans to major in Fine Arts should submit a portfolio of about a dozen representative pieces of art work directly to the Clerk of the School of the Worcester Art Museum. Such a portfolio should also be submitted by any student desiring to enter the program at a later date.

COURSES

F11. INTRODUCTION TO WESTERN ART.

Lectures during the first four weeks deal with general topics such as design principles and technical procedures. The remainder of the course treats significant works of architecture, sculpture, and painting in the light of their times. First semester prerequisite to the second. *Three semester hours each semester.* Mr. Cowardin.

F12b. SURVEY OF WESTERN PAINTING.

General problems of pictorial expression are treated as well as the historical aspects of style. May not be counted in addition to the second semester of Fine Arts 11. Limited to freshmen and sophomores. *Three semester hours.* Mr. Cowardin.

F14a. INTRODUCTION TO THE VISUAL ARTS.

Each of the visual arts is treated in a non-historical way, with special regard for the physical nature of the medium and its expressive potential. May not be counted in addition to the first semester of Fine Arts 11. Limited to freshmen and sophomores. *Three semester hours.* Mr. Cowardin.

15. ART OF THE RENAISSANCE IN ITALY.

Prerequisite: Fine Arts F11 or F12b, or permission of the instructor. Offered in alternate years. *Three semester hours each semester.* Mr. Cowardin.

18. ART OF THE MODERN WORLD.

Painting, sculpture, and architecture of the nineteenth and twentieth centuries, with special emphasis on the origins and evolution of the modern esthetic attitude and its progress to date. *Three semester hours each semester.* Mr. Murphey.

19a. INTRODUCTION TO ORIENTAL ART: THE ANCIENT NEAR EAST AND INDIA.

Not offered, 1968-69.

Prerequisite: at least one semester course in art history. Offered in alternate years. *Three semester hours.* Mr. Cowardin.

19b. INTRODUCTION TO ORIENTAL ART: CHINA AND JAPAN.

Not offered, 1968-69.

Prerequisite: at least one semester course in art history. Offered in alternate years. *Three semester hours.* Mr. Cowardin.

F100. ART WORKSHOP.

A studio course on campus which puts the student in direct contact with the materials and techniques of producing a work of art. Designed especially for the non-major, its purpose is to intensify artistic awareness through direct work in esthetic problem-solving. Uses a variety of media and approaches. In special circumstances may be counted toward the major in lieu of Fine Arts 111. Six studio hours per week. Indivisible course. *Three semester hours each semester.* Mr. Murphey.

F111. BASIC PAINTING.

The fundamental studio course given at the School of the Worcester Art Museum. Open to freshmen who plan to major in fine arts. Indivisible course. *Three semester hours each semester.* Mr. Graziani and Staff.

F112b. EYE-TRAINING.

A lecture-workshop course in esthetic visual experience. Based on a purely visual approach, as distinct from matters of content and association, the course progresses systematically through the visual elements (line, shape, color, etc.) and composition relationships. The student exercises his skill of artistic seeing and uses simple media in daily practice assignments analyzing both art and his environment. A flexible term project involving almost any media in an abstract approach is required. Previous art experience not necessary. *Three semester hours.* Mr. Murphey.

199. ADVANCED PAINTING AND DESIGN.

General designation for all courses at the School of the Worcester Art Museum above the elementary level. Ordinarily open only to majors. Consult the department for semester hours. Staff of the Museum School.

Geography

DEPARTMENT FACULTY

Saul B. Cohen, Ph.D., *Professor of Geography; Director of Graduate School of Geography*

Raymond E. Murphy, Ph.D., *Professor of Economic Geography Emeritus; Editor of Economic Geography*

James M. Blaut, Ph.D., *Professor of Geography*

Robert W. Kates, Ph.D., *Professor of Geography**

Henry J. Warman, Ph.D., *Professor of Geography*

Jeremy Anderson, Ph.D., *Assistant Professor of Geography*

Martyn J. Bowden, Ph.D., *Assistant Professor of Geography*

Roger E. Kasperson, Ph.D.,* *Assistant Professor of Government and Geography*

George F. McCleary, Jr., M.S., *Assistant Professor of Geography*

J. Richard Peet, M.A., *Assistant Professor of Geography*

William A. Koelsch, Ph.D., *Assistant Professor of History and Geography*

David Stea, Ph.D., *Assistant Professor of Geography and Psychology*

George M. Howe, Ph.D., *Visiting Professor of Geography and Climatology*

Gwyn Rowley, Ph.D., *Visiting Lecturer of Geography*

Richard A. Howard, M.A., *Lecturer (Affiliate) in Computer Sciences*

*On leave of absence, first semester, 1968-69.

When the Graduate School of Geography was organized in 1921, Clark became the second university in the United States to establish a separate graduate program in geography. At the present time, advanced training is provided leading to the Master's and Doctor's degrees. In addition, the Staff offers a series of courses for undergraduates within the liberal program of the University. Clark is a center for geographical training and research in the United States, and its various offerings provide a maximum of individual attention through student-teacher dialogue.

UNDERGRADUATE PROGRAM

Majors in Geography are required to take four to five year courses in Geography, and at least three to four year courses in related fields. Related fields include all fields listed under Group B (Social Science) except psychology and linguistics. Related fields also include geology. A student must take 36 hours outside of the geography courses and related fields defined here to meet the requirements for the bachelor's degree.

Geography 11a, Approaches to Geography, and two of the following three courses (11b, Introduction to Physical Geography; 15b, Introduction to Economic Geography; 17b, Introduction to Cultural Geography) are required of majors. These are usually taken in the freshman or sophomore years. The other required courses are Geography 291a, and either Geography 247a, a second-year level language course, or Geography 249a.

An Honors Program in Geography offers opportunity for independent study and research. Information regarding the program can be obtained from the department.

THE GRADUATE SCHOOL OF GEOGRAPHY

MASTER OF ARTS

Admission: Applicants without prior training in Geography are welcome, but may be required to improve their knowledge of Elements of Geography, Economic Geography, Cartography, and Descriptive Statistics. Courses taken to remedy any deficiencies will not count as part of the regular M.A. program. The Graduate Record Examination scores (Verbal and Quantitative) are required of all students with the exception of those in foreign countries. The GRE Advanced Placement Test in Geography is desirable, but not required.

The M. A. program in Geography is a two-year program. Temporarily, however, those who are eligible for the draft are given, upon arrival at Clark, the option of taking the M.A. degree in three semesters and one summer, providing that the summer be devoted to field research under the supervision of a faculty person, or in residence at Clark taking formal registered courses equivalent to nine credits under the direction of a faculty member. Students are required to take Geography 399a, the Field Methods/Field Camp, and two semester seminars. A total of eight year course equivalents are required, of which one to two may be in related disciplines, including reading courses. A student may elect a single or double thesis course as part of his program. For those M.A. candidates interested in Geography and its Pre-College teaching, a single semester course in Internship Teaching in the Secondary School or its equivalent is recommended.

Examinations: Comprehensive examinations for the M.A. cover five fields, normally: (1) philosophy and methodology of geography, (2) a physical geography field, (3) a regional geography field, and (4) and (5) two other systematic fields approved by the staff. The examination for these five fields shall be in writing and extend for five hours. In addition, a 40-minute oral performance on one of these five fields is taken, the field to be the major one in which the thesis is written. The comprehensive examinations are offered at least twice during the academic year, at the end of September and at the end of February, and if sufficient demand warrants, at the end of May.

Thesis: By March 15 of the year in which the candidate expects to receive his degree, he must submit an acceptable draft of the thesis to his adviser; this is reviewed by two staff members before circulation among the rest of the staff for approval. After all revisions have been made and the draft approved by the adviser, the thesis is typed in final form. University requirements concerning the thesis are found in the section on the Graduate School.

DOCTOR OF PHILOSOPHY

Entrance Requirements: Normally, to enter the Ph.D. program, a student must have completed all requirements for a Master's degree in geography at Clark or at another institution. Where there are obvious deficiencies, all or part of the M.A. comprehensive examination and a paper of thesis length and quality may be required of those entering with M.A.'s from other institutions. Deficiencies which are exposed as a result of this examination are expected to be remedied by course and written work taken during the first year of doctoral residence.

Program Requirements: A doctoral candidate must fulfill a two-year residence requirement if entering with an M.A. from another institution and a one-year residence requirement if he has fulfilled the Clark two-year M.A. requirement. The candidate normally elects four courses each semester, including a minimum of one seminar per semester. The candidate must pass an examination in French, German, Russian, or Spanish, preferably in his first year at Clark. The department may set an additional language or other requirement as the student's field or research may demand. The language and alternative requirements must be fulfilled before the preliminary examination is scheduled.

Preliminary Examinations: The candidate offers three fields for his preliminary examination. The major is the field in which he expects to write his dissertation. The other two fields are chosen from those which have particular bearing on the major field and with the written approval of the department. The candidate's grasp of the philosophy and nature of geography is also examined. The examination extends for approximately two and one half hours.

Dissertation and Defense: Circulation of the dissertation topic and outline is initiated by the student through his major advisor to every member of the staff and any time after the first semester of residence. Following staff approval, the student may be called before the staff for an oral proposal review. A student who has successfully passed his preliminary Ph.D. examination must file for candidacy within one year after his dissertation topic has been approved and accepted.

By February 1 of the year in which the candidate expects to receive his degree, he must submit an acceptable dissertation draft to his major professor. Upon approval by the major advisor, three copies of the draft must be made available for review by a second reader and two reviewers. It is then circulated among other staff members for their comments, and a date is set for its defense. No dissertation defenses are scheduled after April 1. If the defense is adequate, and after any necessary minor revisions have been approved by the major professor, the dissertation is typed in final form. Three carbon copies must be delivered to the departmental office at least four weeks before the date of commencement. This is in addition to the ribbon copy that must be delivered to the Registrar.

Research or Teaching Prerequisite: Some teaching or research experience at Clark (or its equivalent at another institution) is prerequisite to the Doctor's degree.

DISTINCTIVE FEATURES AND SPECIALIZATION

Graduate students are assigned carrels in the Geography Workroom. The Workroom and other sections of the Geography Building contain specialized equipment and research facilities for the use of students and staff. The Libbey Library of the Geography Building serves for general conferences and the reception of visiting lecturers. Workroom fees totaling \$10 per semester, are payable on November 1 and March 1.

A feature of the Graduate School of Geography is a field course/camp program which includes studies of land utilization, geomorphology, meteorology, resources and urban geography, with special training in mapping, sampling and other field techniques. Cost of the Field Camp is \$80-\$100; the camp is generally held in Puerto Rico from the second through fourth week of January.

PUBLICATIONS

A professional magazine, *Economic Geography*, is edited by a staff member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic and urban geography. The magazine has a world-wide distribution, with a total circulation of 4,500.

The graduate students, through the years, have maintained the Clark University Geographical Society. The annual publication, *The Monadnock*, keeps School of Geography alumni in touch with each other and with news and scholarly activities in the School.

COURSES

F11a. APPROACHES TO GEOGRAPHY.

A general framework for understanding geography for those with curiosity about the field. History and philosophy of the field and the various approaches to geographic research that are employed in its major sub-fields, the latter to be treated partly in the form of case studies. For freshmen and sophomores; juniors and seniors admitted by consent of the instructor. Part of a full-year introductory course that must be followed by one of the following: Geography 11b, Geography 15b, Geography 17b. *Three semester hours.*

Mr. Bowden, Coordinator, and Staff.

F11b. INTRODUCTION TO PHYSICAL GEOGRAPHY.

Physical geography, with emphasis on the principles of climatology and physiography. Open to freshmen and sophomores; juniors and seniors admitted with consent of instructor. *Three semester hours.*

Mr. Warman.

F12a. SOCIAL ANTHROPOLOGY.

An analysis of primitive society with emphasis on social structure, including religion, kinship and economics. The relation between culture and personality and the processes of social change in the primitive world are explored. Open to freshmen. *Three semester hours.*

Mr. Blaut.

F15b. INTRODUCTION TO ECONOMIC GEOGRAPHY.

Introduction to major areal differences in economic activity in the primary, secondary and tertiary sectors. For freshmen and sophomores; juniors and seniors admitted by consent of the instructor. *Three semester hours.*

Mr. Anderson.

F17b. INTRODUCTION TO CULTURAL GEOGRAPHY.

Study of the effect of culture on the earth, and the varying uses of natural resources at different cultural levels. For freshmen and sophomores, juniors and seniors admitted by consent of the instructor. *Three semester hours.*

Mr. Blaut.

19b. MAP APPRECIATION AND READING.

The philosophy and history of maps and mapping; types of maps and elements of maps. A general liberal arts approach to maps and cartography. *Three semester hours.*

Mr. McCleary.

114a. PRINCIPLES OF GEOMORPHOLOGY.

The analysis and distribution of physical features in the geographic landscape. Field trips required, with \$5.00 field trip fee. Prerequisite: Geography 11b or Geology 12, or equivalent. *Three semester hours.*

To be announced.

120a. ELEMENTS OF PHYSICAL CLIMATOLOGY.

A survey of the elements of climate, atmospheric circulation and the exchange of heat and moisture between the earth and its atmosphere. Prerequisite: Geography 11b or consent of the instructor. *Three semester hours.* Mr. Howe.

150b. MANAGEMENT AND CONSERVATION OF RESOURCES.

NOT OFFERED, 1968-69.

An introduction to natural resource problems arising from population pressure, change in taste and technology, and concern with the quality of the environment. Field trips required. Limited to 25 students. Prerequisite: introductory social or natural science course. *Three semester hours.* Mr. Kates.

160a. GEOGRAPHY OF MANUFACTURING.

A description and analysis of the spatial distribution of manufacturing in the world, including an introduction to industrial location theory. Prerequisite: Geography 11a or Geography 15b or equivalent. *Three semester hours.* Mr. Peet.

200a. GEOGRAPHY IN EDUCATION.

Designed for students intending to teach geography as a separate subject or in the social studies; for supervisory personnel and for teachers in service. Subject-matter course treats various geographic factors and concepts separately, but in their sequences and inter-relationships. References made to and work experience in techniques and methodology. Signature of instructor required. *Three semester hours.* Mr. Warman.

200b. GEOGRAPHY IN EDUCATION.

Emphasis on Geography content and implementation. Concern is with geography background, techniques, new methods, and trends. Prerequisite: Geography 200a or equivalent. Signature of instructor required. *Three semester hours.* Mr. Warman.

202. HONORS.

Independent study, reading and research. Open only to honors undergraduates. *Three to six semester hours.* Staff.

207. BEHAVIORAL SCIENCE AND THE ENVIRONMENT.

Human and animal social behavior related to aspects of the physical environment. Social interaction, territory, density, movement, and migration. Introduction to environmental design: problem formulation, decision processes, simulation. (Offered jointly with Psychology Department) Prerequisite: permission of instructor. *Three semester hours each semester.* Mr. Stea.

214b. REGIONAL PHYSIOGRAPHY.

The regional interpretation of major land forms of North America and their inter-relationships with climate, vegetation and soils. Field trips required. Prerequisite: Geography 114a or equivalent. *Three semester hours.* To be announced.

221b. REGIONAL CLIMATOLOGY.

World classification and description of climates. The various classifications of climate, especially as related to vegetation. Prerequisite: Geography 120a or consent of the instructor. *Three semester hours.* Mr. Howe.

230. POLITICAL GEOGRAPHY.

Theory and structure of political geography. Political processes and the physical cultural landscape; spatial structure of the national state and of international political systems. Prerequisites: Geography 11a, or Government 14. *Four semester hours each semester.*

Mr. Cohen.

240a. AGRICULTURAL GEOGRAPHY.

A study of physical, and cultural factors associated with the areal differentiation of agricultural systems. Space-adjusting strategies of individual farm systems, national strategies of agricultural development. Permission of instructor. *Three semester hours.*

Mr. Anderson.

245a. COMPARATIVE STUDIES IN HISTORY AND GEOGRAPHY.

(Offered jointly with History Department) Comparative analysis of selected literature of historical geography and related fields of history with special attention to methodological differences. *Four semester hours.*

Mr. Koelsch.

245b. HISTORICAL GEOGRAPHY OF EASTERN U.S.A.

Studies in settlement and resource utilization on the Eastern Seaboard before 1860. *Four semester hours.*

Mr. Koelsch and Mr. Peet.

247a. INTRODUCTION TO QUANTITATIVE METHODS IN GEOGRAPHY.

Elementary statistical methods for geographers. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. McCleary *et al.*

249a. COMPUTER PROGRAMMING IN GEOGRAPHY.

Fundamentals of Fortran IV programming. Introduction to computer-oriented information, storage, and retrieval systems and computer-generated maps. Open to majors and graduate students only. *Three semester hours.*

Mr. Howard.

260. GEOGRAPHY OF MANUFACTURING AND ENERGY.

Not offered, 1968-69.

A description and analysis of the spatial distributions of manufacturing and energy resource exploitation in the world, including an introduction to industrial location theory. *Three semester hours each semester.*

Mr. Peet.

261. URBAN GEOGRAPHY.

A systematic study of urbanization levels. Emphasis on research that has been done, and on sources and research ideas. *Six semester hours.*

Mr. Rowley.

269b. ETHNO-GEOGRAPHY.

Study of the interdisciplinary field embracing parts of cultural geography and cultural anthropology. Emphasis is placed on problems of theory in culture history, primitive economics, and technological change. *Three semester hours.*

Mr. Blaut.

272a. RELATIONS OF CULTURE AND ENVIRONMENT.

An historical approach to study of the interrelations of culture and nature; geochronology; culture change and migrations; agricultural origins and diffusion of plants and animals; culture and environmental perception. Emphasis on sources in the study of particular problems in cultural geography. Open to juniors and seniors. Geography F11a or F17b or equivalent required, or by permission of instructor. *Four semester hours.*

Mr. Bowden.

273b. SETTLEMENT GEOGRAPHY.

An historical cultural approach to study of rural and urban settlement patterns; origin and development of field systems and settlement types in Europe and North America; models of settlement; the internal structure and external relations of urban and rural

places. Open to juniors and seniors. Geography F11a or F17b or 272 or equivalent required, or by permission of instructor. *Four semester hours.* Mr. Bowden.

276b. SEMINAR ON PEASANT AGRICULTURE. Not offered, 1968-69.
Three semester hours. Mr. Blaut.

282a. GEOGRAPHY OF ANGLO-AMERICA. Not offered, 1968-69.
Three semester hours.

283b. GEOGRAPHY OF MIDDLE AMERICA. Mr. Blaut.
Three semester hours.

284b. GEOGRAPHY OF SOUTH AMERICA. Mr. Warman.
Three semester hours.

285b. GEOGRAPHY OF EUROPE. Not offered, 1968-69.
Three semester hours. Mr. Bowden.

287b. GEOGRAPHY OF THE SOVIET UNION.
A topical (systematic) approach will be followed with special emphasis on the historical geography of the Russian Empire and the economic geography of the U.S.S.R. *Three semester hours.* Mr. Anderson.

288b. GEOGRAPHY OF EAST AFRICA AS A DEVELOPING REGION.
An interdisciplinary approach to the geography of developing countries with reference to economic development, peasant systems, education, and political processes. *One semester hour.* Mr. Kates.

291a. ELEMENTS OF CARTOGRAPHY.
Principles of cartography, including scale and map projections; compilation, generalization, symbolization, and the fundamentals of design. Two-hour weekly laboratory. Required of all majors. Open to sophomores, majors or those who have completed Geography 19b. Fulfills the departmental requirements for M.A. candidates. *Four semester hours.* Mr. McCleary.

291b. MAP ANALYSIS AND USE. Not offered, 1968-69.
Methods and procedures for the analysis of areal distributions, particularly those expressed in cartographic form. Prerequisite: Geography 291a; a basic knowledge of statistical methods is required. *Three semester hours.* Mr. McCleary.

292b. MAP DESIGN. Mr. McCleary.
Theory and practice in the development of the design of maps. The map is examined as a medium of communication, as a perceived object, and as an information system. Prerequisite: Geography 291a. *Three semester hours.*

294b. CARTOGRAPHIC TECHNIQUES. Not offered, 1968-69.
Methods of map preparation and reproduction including computerized mapping programs. Prerequisite: Geography 291a. *Three semester hours.* Mr. McCleary.

296b. THE MAP AS AN EDUCATIONAL MEDIUM. Not offered, 1968-69.
The fundamentals of cartography and mapping; discussion of map design for classroom use in elementary and secondary schools. Although primary emphasis is on concepts and theory, much attention will be given to the technical facets of this activity. *Four semester hours.* Mr. McCleary.

310b. PRINCIPLES OF GEOMORPHOLOGY.

Not offered, 1968-69.

Three semester hours.

347b. QUANTITATIVE METHODS IN GEOGRAPHIC RESEARCH.

Application of quantitative methods to current geographic research. Prerequisite: Geography 247a or equivalent. *Three semester hours.* To be announced.

350b. PROBLEMS OF RESOURCE MANAGEMENT.

Methods of estimation and projection of resource availability and need. Evaluation of institutions for resource allocation and decision-making. *Three semester hours.* Mr. Kates.

360a. THEORY OF ECONOMIC GEOGRAPHY.

Industrial and agricultural location theory; interregional trade theory. *Three semester hours.* Mr. Peet.

362a. NETWORK OF CITIES.

Not offered, 1968-69.

An historical approach to the developments of patterns of urban centers; external relations of cities in Europe and North America after 1100 A.D.; dynamics of central place and other theories. Prerequisite: Geography 273, 361, or equivalent, or by permission of instructor. *Three semester hours.* Mr. Bowden.

363b. THE DYNAMICS OF CITY GROWTH.

An historical approach to study of the changing internal structure of urban areas; theories and models of city growth in Europe and North America from 1100 A.D. to the present. Prerequisite: Geography 273, 361, or 362, or equivalent, or by permission of instructor. *Three semester hours.* Mr. Bowden.

364b. TRANSPORTATION AND REGIONAL ECONOMIC DEVELOPMENT.

The historical role of transportation in the process of regional economic growth. *Three semester hours.* Mr. Peet.

370a. HUMAN AND CULTURAL GEOGRAPHY.

Not offered, 1968-69.

Three semester hours.

390a. AIR PHOTO INTERPRETATION.

Not offered, 1968-69.

Three semester hours.

399a. FIELD RESEARCH METHODS IN GEOGRAPHY AND FIELD CAMP.

Theory and techniques of field (observational and survey) research; experimental design. Field camp in January to be held in Puerto Rico; fee \$80-\$100. Required of all graduate students who have not had equivalent. One or both components may be waived with consent of instructors. *Four semester hours* (three credits for Field Research Methods; one credit for Field Camp). Mr. Anderson *et al.*

SEMINARS

30a. SEMINAR IN POPULATION GEOGRAPHY.

Three semester hours.

Mr. Warman.

315b. SEMINAR IN GEOMORPHOLOGY.

Three semester hours.

To be announced.

320b. SEMINAR IN CLIMATOLOGY.

Three semester hours.

Mr. Howe.

331b. PROBLEMS IN POLITICAL GEOGRAPHY.

Historical development of political geography; current theory and research approaches. Prerequisite: Geography 230 or its equivalent. *Three semester hours.*

Mr. Cohen and Mr. Kasperson.

340b. SEMINAR ON AGRICULTURAL GEOGRAPHY.

The 1969 seminar will focus on the diffusion of agricultural innovations. Survey of studies to date; methods of analysis; simulation models. Each participant will be expected to identify and investigate a diffusion problem. *Three semester hours.*

Mr. Anderson and Mr. Peet.

355b. SEMINAR ON RESOURCES.

Three semester hours.

Not offered, 1968-69.

356b. SEMINAR ON PERCEPTION OF THE GEOGRAPHIC ENVIRONMENT.

Focus on natural hazard research. *Three semester hours.*

Mr. Kates.

363b. SEMINAR IN MARKETING GEOGRAPHY.

Three semester hours.

Not offered, 1968-69.

365a. SEMINAR IN ECONOMIC GEOGRAPHY.

Three semester hours.

Mr. Peet.

366. SEMINAR IN URBAN GEOGRAPHY.

Three semester hours.

Mr. Rowley.

371a. SEMINAR IN HISTORICAL AND CULTURAL GEOGRAPHY.

Three semester hours.

Not offered, 1968-69.

372a. SEMINAR IN THE HISTORICAL GEOGRAPHY OF NEW ENGLAND.

Three semester hours.

Mr. Koelsch.

375a. SEMINAR IN CULTURAL GEOGRAPHY.

Three semester hours.

Not offered, 1968-69.

380a. SEMINAR IN PHILOSOPHY OF GEOGRAPHY.

Three semester hours.

Mr. Blaut.

381b. SEMINAR ON THEMES IN GEOGRAPHIC THOUGHT.

Three semester hours.

Not offered, 1968-69.

382b. SEMINAR IN HISTORICAL GEOGRAPHY OF WESTERN NORTH AMERICA.

Three semester hours.

Not offered, 1968-69.

391a. SEMINAR IN CARTOGRAPHY.

Three semester hours.

Mr. McCleary.

READING, RESEARCH AND THESIS COURSES

300. READING COURSE.

Prerequisite: consent of the instructor.

301. RESEARCH IN GEOGRAPHY.

Prerequisite: consent of the instructor.

302. THESIS RESEARCH.

Single or double course. Prerequisite: consent of the staff.

Strongly recommended for concentration in Economic Geography:

Economics 277. REGIONAL ECONOMICS.

Six semester hours.

Mr. Puffer.

Economics 290a. ECONOMETRICS.

Three semester hours.

Mr. Puffer.

Economics 302b. ECONOMIC THEORY. MACRO PROBLEMS.

Three semester hours.

Mr. Puffer.

Strongly recommended for concentration in Political Geography:

Government 201b. POLITICAL BEHAVIOR.

Four semester hours.

Mr. Kasperson.

Government 230b. URBAN GOVERNMENT AND POLITICS.

Four semester hours.

Mr. Kasperson.

Geology

DEPARTMENT FACULTY

Richard P. Hight, Ph.D., *Assistant Professor (Affiliate) of Geology*

Robert E. Lingner, M.A., *Assistant Professor (Affiliate) of Geology*

Joseph A. Sinnott, M.S., *Lecturer in Geology*

UNDERGRADUATE PROGRAM

Courses are offered in geology to supplement major work in related areas and to provide an introduction to the earth sciences for interested students. The undergraduate major program has been discontinued for students entering Clark after January 1967.

COURSES

F11. GENERAL GEOLOGY.

Introduction to geology, origin of the earth, its development through time and the succession of plant and animal life. First semester deals with common rocks, their structure, origin and occurrence; geological activities of the air, streams and sea; nature of glaciers, volcanoes and earthquakes, and age of the earth. Laboratory work consists of rock and mineral identification and map interpretation. Second semester deals with the origin of continents and ocean basins, their development through time; the geologic history of North America; and evolution of life through geologic time. Laboratory work consists of geologic map interpretation and fossil identification. Occasional field trips. Indivisible course. Laboratory. *Four semester hours each semester.*

Mr. Lingner.

112a. OPTICAL MINERALOGY.

Principles of optics as applied to the identification of minerals with the polarizing microscope. Laboratory. *Four semester hours.*

Mr. Hight.

114b. PETROGRAPHY.

The classification, description and thin section study of the common rock groups. Laboratory. *Four semester hours.*

Mr. Hight.

131b. STRUCTURAL GEOLOGY.

Analysis of rock deformation based on the principles of mechanics and the utilization of research data obtained from laboratory and field investigations. The principles of structural geology will be applied to the interpretation of major fold, fault and fracture systems of the earth. Field trip. Laboratory. *Four semester hours.*

141a. THE FOSSIL RECORD.

A systematic survey of the morphology, taxonomy and geologic history of groups of organisms commonly found as fossils. The techniques and principles used for interpreting the fossil communities in terms of age and environment will be discussed. Field trip. Laboratory. *Three semester hours.*

151b. INTRODUCTORY FIELD METHODS.

A survey course in field geology. Includes introductory methods in plane table mapping, air photo interpretation, and topographic mapping. Numerous field excursions. Prerequisite: permission of instructor. *Three semester hours.* Mr. Sinnott.

SUMMER FIELD CAMP IN GEOLOGY.

Required of geology majors and should be taken at the end of the sophomore or junior year at a field camp approved by the department. *Three to six semester hours.*

Geography: course descriptions are listed in the section, "Geography."

114a. PRINCIPLES OF GEOMORPHOLOGY.

214b. REGIONAL PHYSIOGRAPHY.

Civil Engineering: course descriptions are listed in the section, "Department of Civil Engineering" in the catalog of Worcester Polytechnic Institute.

CE. 540. ENGINEERING GEOLOGY.

Mr. Sage.

CE. 541. SEDIMENTATION

Mr. Sage.

German

DEPARTMENT FACULTY

Karl J. R. Arndt, Ph.D., *Professor of German, Department Chairman*

James S. Edwards, A.M., *Associate Professor of German*

Walter Schatzberg, Ph.D., *Assistant Professor of German*

Alfred Anderau, Ph.D., *Assistant Professor of German*

UNDERGRADUATE PROGRAM

The Department of German intends primarily to give its students a liberal and humanistic education by presenting and interpreting the language, life, and literature of German-speaking peoples. Students interested in German as their major should consult the department chairman; for honors programs, Mr. Edwards. The Department requires a regular class attendance in all courses.

In addition, at least 36 semester hours of a major's program must be selected from other than Group C and Group D courses.

FIRST YEAR COURSES

F11. INTRODUCTORY GERMAN.

A comprehensive introduction to the written as well as the spoken language. The course aims at acquisition of all four skills: reading, writing, speaking and understanding. The language laboratory will be used to assist in reaching these goals. Indivisible course. *Three semester hours each semester.* Mr. Edwards, Mr. Schatzberg and Mr. Anderau.

SECOND YEAR COURSES

F12. INTERMEDIATE GERMAN.

Review of German grammar. Study of expository and narrative prose. Aural and oral training with the assistance of the language laboratory. Prerequisite: German 11 or advanced placement. *Three semester hours each semester.*

Mr. Edwards, Mr. Schatzberg and Mr. Anderau

F14. INTRODUCTION TO GERMAN LITERATURE (Intermediate course).

Principally a reading course for students who wish to gain as rapidly as possible a general knowledge of German Literature at the intermediate level. Reading and interpretation of the works of representative German writers. Prerequisite: German 11 or two years of high school German and consent of instructor. *Three semester hours each semester.* Mr. Arndt.

ADVANCED COURSES

130. MODERN GERMAN PROSE.

Selected works by Mann, Hesse, Kafka, Dürrenmatt. Discussions, oral and written reports in German. Prerequisite: German 12. *Three semester hours each semester.* Mr. Schatzberg.

132. ADVANCED COMPOSITION AND LITERATURE.

Not offered, 1968-69.

Intensive training in the aural, oral, and written use of the language in preparation for teaching and government service. Required of majors. Prerequisite: oral and written examination. *Three semester hours each semester.* Mr. Anderau.

134. GERMAN LITERATURE SINCE GOETHE.

Reading and interpretation of representative works of German literature since Goethe. Prerequisite: German 12 or advanced placement. *Three semester hours each semester.*

Mr. Edwards.

136a. GERMAN LYRIC POETRY.

German lyric poetry from the Reformation to the present. Prerequisite: German 12. *Three semester hours.* Mr. Arndt.

138. CONTEMPORARY GERMAN DRAMA.

Not offered, 1968-69.

Reading and interpretation of outstanding works of contemporary German drama, including plays of Dürrenmatt, Frisch, Hochwälder, Hochhuth, and Peter Weiss. Prerequisite: German 12. *Three semester hours each semester.* Mr. Edwards.

140a. GERMAN ENLIGHTENMENT.

Not offered, 1968-69.

Selected readings from the works of Wolff, Gottsched, Brockes, Haller and Lessing. Several Storm and Stress authors will also be considered toward the end of the semester. Prerequisite: German 12. *Three semester hours.* Mr. Schatzberg.

142b. GERMAN ROMANTICISM.

Not offered, 1968-69.

A study of selected works by the Schlegel Brothers, Novalis, Tieck, Brentano, Chamisso, Fouque, E.T.A. Hoffmann, Eichendorff and Heine. Prerequisite: German 12. *Three semester hours.* Mr. Schatzberg.

150a. GOETHE.

An introduction to the life and work of Goethe, excepting his *Faust*. Replaces first semester of 130. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Arndt.

152b. SCHILLER.

Not offered, 1968-69.

An introduction to the life and work of Schiller. Replaces second semester of 130. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Arndt.

154. HISTORY OF GERMAN LITERATURE.

Not offered, 1968-69.

Survey of German literature from earliest times to the present. Given in German. Prerequisite: German 132 or consent of the instructor. *Three semester hours each semester.* Mr. Edwards.

162a. GOETHE'S FAUST.

Not offered, 1968-69.

Reading and discussion of Goethe's *Faust I and II*. Given in German. Prerequisite: German 132 or consent of the instructor. *Three semester hours.* Mr. Arndt.

165b. FROM EXPRESSIONISM TO CATASTROPHE.

German literature from World War I to World War II. Given in German. Prerequisite: German 132 or consent of the instructor. *Three semester hours.* Mr. Arndt.

166. GERMAN DRAMA SINCE KLEIST.

Not offered, 1968-69.

Given in German. *Three semester hours each semester.* Mr. Edwards.

196. INDEPENDENT READING AND RESEARCH IN GERMAN LITERATURE. Not offered, 1968-69. Independent course of study limited to highly qualified seniors. Reading and research will be in German and the program arranged individually. Prerequisite: consent of the instructor. *Three semester hours each semester.* Mr. Arndt.

COURSES GIVEN IN ENGLISH

141. GERMANIC CIVILIZATION.

Illustrated lecture course on the literature, history and fine arts of German lands from the Holy Roman Empire to the present day, with emphasis on the Reformation, Age of Enlightenment and the Classical Period. Given in English. *Three semester hours each semester.* Mr. Edwards.

197b. THE FAUST THEME IN LITERATURE.

A study of the fortunes of Faust and the Faustian spirit as treated in European and American literature from the Reformation to Hiroshima. Given in English. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Arndt.

198. SEMINAR.

Principally for majors but open to other qualified upperclassmen. In 1968-69 the seminar will be given in English by the entire staff, with studies on Mann, Kafka, Brecht and Rilke. Prerequisite: consent of the instructor. *Three semester hours.* Staff.

199. THE GERMAN CONTRIBUTION TO WORLD LITERATURE.

Not offered, 1968-69.

Goethe in 1827: "The epoch of world literature is here and everyone must now work to hasten the development of this epoch." Reading, analysis and discussion of translated works from various periods of German literature, starting with the *Song of the Nibelungs* and ending with representative works of the currently dominant "Group 1947." Given in English. Prerequisite: consent of the instructor. *Three semester hours each semester.* Mr. Arndt.

Government and International Relations

DEPARTMENT FACULTY

Sherman S. Hayden, Ph.D., *Professor of International Relations,
Department Chairman*

Morris H. Cohen, Ph.D., *Professor of Government*

Knud Rasmussen, Ph.D., *Associate Professor of Government*

Roger E. Kasperson, Ph.D., *Assistant Professor of Government and
Geography**

*On leave of absence, first semester, 1968-69.

UNDERGRADUATE PROGRAM

Majors in government must take Government 159a, 15, and 205a and b, preferably in the freshman, sophomore and junior years respectively, and are expected further to take four additional hours in American government and politics, twelve other hours in government, and twelve hours selected from economics, geography, history, psychology and sociology.

Majors in international relations should take Government 159b and History 10 in the freshman year and Economics 11 and Government 15 before the end of the sophomore year. Also required are Government 240a or 242b, 241, and twelve hours selected from economics, geography, history, and other from government courses.

Thirty-six hours of any major program must be selected from fields *other than* those listed in the two paragraphs preceding. Proficiency in a foreign language at the level normally attained by two years study is required in an international relations major and strongly recommended of the government major (mathematics or statistics may, however, be substituted).

GRADUATE PROGRAM

Master of Arts: A thirty-hour program, including a master's thesis, is available in either government or international relations. A complete draft of the thesis must be received promptly after the spring recess if the candidate is to obtain the degree that June. An oral examination is also required. A candidate is expected to spend one year in residence for this degree.

Doctor of Philosophy: Opportunity to prepare for this degree will be offered by the department. At least one year's residence is absolutely required. A joint program with the history department, with the degree to be granted by the appropriate department for the particular case, is available in international relations. Every doctoral program consists of four selected fields, one or two for written examination, the rest for oral. These examinations together constitute the "preliminaries".

Before completing the preliminaries, examinations in French and German must be passed. Another language may be substituted, with permission, for one of these, or a second examination in a single language designed to demonstrate full research competence.

The doctoral dissertation, in a designated special field, must be submitted in complete first draft no later than March 1 of the year wherein the degree is expected. The final examination covers both the dissertation and the special field.

Teaching experience at Clark or any teaching accepted as equivalent, is prerequisite to this degree.

COURSES

14. INTERNATIONAL RELATIONS.

A survey of world politics since 1918, with emphasis on the shifting patterns of power and the rise of new nations and revolutionary doctrines. The second semester deals mainly with events since World War II. *Three semester hours each semester.* Mr. Hayden.

15. INTRODUCTION TO AMERICAN GOVERNMENT.

A short survey of the theories of the origins and purposes of the state is followed by a study of American government with emphasis on contemporary problems of the federal government. *Three semester hours each semester.* Mr. Cohen.

159a. INTRODUCTION TO POLITICAL SCIENCE.

A survey of the components of political science with discussion of the development of the discipline. Some emphasis will be placed upon the systematic analytic study of modern political systems. *Three semester hours.* Mr. Rasmussen.

201b. POLITICAL BEHAVIOR.

Causes and forms of political behavior, their relation to the functioning of the political system: decision-making, political attitudes and participation, patterns of electoral, legislative, and administrative behavior. *Four semester hours.* Mr. Kasperson.

205a. ROOTS OF POLITICAL THOUGHT.

A study of the development of Western political thought from the Socratic philosophies to Hobbes. The study will deal with the evolution of political thought in the context of influential, social, political, and economic forces. *Four semester hours.* Mr. Rasmussen.

205b. RECENT POLITICAL THOUGHT.

A study of modern political theory as developed in the context of the social, political, and economic forces which have shaped Western thought since the French Revolution. *Four semester hours.* Mr. Rasmussen.

230b. URBAN GOVERNMENT AND POLITICS.

Organization and process in American urban society; urban power-structure, policy making, and selected case stories. *Four semester hours.* Mr. Kasperson.

240a. SEMINAR IN INTERNATIONAL RELATIONS.

Basic ideas and their application to current problems. This or 242b required for international relations majors. Open to a limited number of non-majors at the discretion of the instructor. *Four semester hours.* Mr. Hayden.

241. INTERNATIONAL LAW AND ORGANIZATION.

First semester deals with the historic principles of international law and their application in the modern world. Second semester deals with the institutions created to handle problems of commerce, welfare and collective security on an international basis. Offered in alternate years. *Four semester hours each semester.* Mr. Hayden.

242b. INTERNATIONAL POLITICS.

Not offered, 1968-69.

A study of contemporary trends in international politics. Some emphasis will be placed on a systematic study of the national versus the international community. This course or 240b required for international relations majors. *Four semester hours.* Mr. Rasmussen.

25b. COMPARATIVE GOVERNMENT.

A comparative study of the major West European political systems. Some study of the political historic development will lay the basis for comparison of modern functions of government. *Four semester hours.* Mr. Rasmussen.

250. SEMINAR IN 20TH CENTURY POLITICAL THEORY.

A study of normative and analytic theory. Some emphasis will be placed on the individual in a modern mass society and the impact the development of the mass society has had upon theory. Prerequisite: Roots of Political Thought and Recent Political Thought or the permission of the instructor. *Four semester hours.* Mr. Rasmussen.

251a. AMERICAN POLITICAL PARTIES.

American party organizations, pressure groups and the electorate in American politics, with emphasis on current problems and trends in the field. Offered in alternate years. *Four semester hours.* Mr. Cohen.

252b. INTRODUCTION TO PUBLIC ADMINISTRATION.

Not offered, 1968-69.

An examination of the role of administration in modern government, including problems of personnel administration, fiscal management, administrative regulation and government organization. Offered in alternate years. *Four semester hours.* Mr. Cohen.

254. AMERICAN CONSTITUTIONAL HISTORY AND LAW.

A study of the major developments in our constitutional system and law, with emphasis in the second semester on contemporary cases and problems in civil liberties. *Four semester hours each semester.* Mr. Campbell and Mr. Cohen.

255b. THE LEGISLATIVE PROCESS.

Not offered, 1967-68.

A study of policy-making in Congress, involving problems of legislative organization and procedure, leadership and presidential-legislative relationships, examined primarily by the case method and by individual research on particular pieces of recent legislation. *Four semester hours.* Mr. Cohen.

341b. PROBLEMS IN INTERNATIONAL RELATIONS.

Three semester hours.

Mr. Hayden.

351a. PROBLEMS IN AMERICAN GOVERNMENT.

Three semester hours.

Mr. Cohen.

GRADUATE READING AND THESIS COURSES

34. READING }
340. THESIS } IN INTERNATIONAL RELATIONS.

Mr. Hayden.

35. READING }
350. THESIS } IN GOVERNMENT AND POLITICS.

Mr. Cohen, Mr. Kasperson,
and Mr. Rasmussen.

History

DEPARTMENT FACULTY

Gerald N. Grob, Ph.D., *Professor of American History, Department Chairman*

George A. Billias, Ph.D., *Professor of American History**

Robert F. Campbell, Ph.D., *Professor of American History*

Thomas C. Barrow, Ph.D., *Associate Professor of American History, Graduate Program Adviser*

Daniel R. Borg, Ph.D., *Associate Professor of European History*

Richard B. Ford, Ph.D., *Assistant Professor of Comparative History*

William A. Koelsch, Ph.D., *Assistant Professor of American History and of Geography*

David W. Savage, Ph.D., *Assistant Professor of English History*

Stewart A. Stehlin, Ph.D., *Assistant Professor of European History*

John O. Iatrides, Ph.D., *Lecturer in Russian History*

Marcus A. McCorison, M.S., *Lecturer in American History, Director of the American Antiquarian Society*

*On leave of absence, 1968-69.

UNDERGRADUATE PROGRAM

A student majoring in history normally elects History 10 plus 32 additional credit hours in history. Students may be excused from History 10 if they have achieved a high level of performance on the Advanced Placement examination or demonstrate an advanced knowledge of modern Western history. Of the advanced history courses, at least eight hours must be in American and at least eight hours in non-American history. (Beginning in September, 1968, all 2 and 3-level courses in history will carry four hours credit.) An additional twelve hours must be taken in the social sciences.

At least thirty-six hours of a major's degree program must be selected in fields *other than* economics, geography, government, history, psychology, or sociology. The department recommends, though it does not require, that its undergraduate majors attain proficiency in at least one modern foreign language. Students planning to go on to graduate school are advised that demonstration of competence in one or more appropriate foreign languages is an important consideration in the admissions and fellowship award process of most leading universities. Students should also note that a knowledge of statistics and computer usage is highly desirable for advanced work in history.

Students may extend the scope of their undergraduate programs through the offerings of cooperating colleges in Worcester, by independent study and research, and in the honors program in history. Further information about these matters is available from the department chairman or other members of the department.

GRADUATE PROGRAM

The principal areas of graduate study are American, English, and Modern European history. The instructional resources of the American Antiquarian Society supplement those of the department in early American history. Consequently, one of the major features of the department is its specialization in the colonial and early national period

(to 1876) of American history. Full-time residence is expected of all graduate students. Entering students register for the Departmental Seminar and three other courses. Individual programs are worked out with the Graduate Program Adviser during the first semester of residence.

Master of Arts: The master of arts program ordinarily requires a thesis and an oral examination on the thesis field and two other fields. One year's residence is required, but completion of the program normally demands a longer period. A complete draft of the thesis must be submitted to the student's adviser by the Monday following spring recess of the year in which the candidate hopes to receive his degree.

Students in the doctoral program who have passed the doctoral orals automatically upon application receive a master's degree.

Doctor of Philosophy: The emphasis in the doctoral program is on mastery of the discipline of history and certain defined areas within it rather than on the accumulation of course credits. Each student defines four fields in cooperation with the Graduate Program Adviser and prepares for them in whatever ways seem appropriate in view of his background and interests. One or two of the four fields is completed early, normally through written examination. The others are tested in an oral examination, which must be attempted *not later than* the end of the third year in residence. Written and oral examinations over the four fields constitute the "preliminary examination" required by the Graduate Board. One of these four fields may be completed outside the department.

A student may complete the language requirement in one of two ways: (a) he may pass the E.T.S. standardized examinations in French and German. Students concentrating in European history will normally take this route; (b) he may pass the E.T.S. standardized examination in *either* French or German, and later fulfill a second, more advanced requirement in the same language. Students concentrating in English and American history normally, though not invariably, select this option. Another modern foreign language may be substituted for French or German if it seems essential to the student's major program. Statistics and computer usage may be substituted for the second language requirement.

An entering doctoral student must take the first E.T.S. examination as soon as it is offered in his first semester of residence, and must have passed this examination by the end of the first calendar year of residence in order to register for his second year. The second E.T.S. examination (or the alternative requirement) should be attempted early in the second year and must be completed before the student registers for his third year. All language requirements must be satisfied before the preliminary oral examination can be scheduled.

A student may equip himself for his own research program early through the Departmental Seminar, research seminars, individualized reading courses, and orientation to area library resources. The department's affiliation with the American Antiquarian Society provides graduate students with the facilities of one of the country's finest research libraries, with over 750,000 volumes and many valuable manuscripts relating to early American history down to 1876. A dozen smaller libraries in Worcester, with combined holdings of over a million volumes, further extend the resources of the Clark library, as does easy access to Boston, Providence and New Haven area research facilities.

The doctoral dissertation must be submitted in complete preliminary draft to the chief instructor not later than March 1 of the year in which the candidate hopes to

receive his degree. A final oral examination, the "dissertation defense," covers the dissertation and the special field relating to it.

Some teaching experience at the college level is prerequisite to the Doctor of Philosophy degree. A number of students serve as assistants in History 10 and other courses in their third year of residence, while others teach in cooperating institutions in the Worcester area.

All work required for the doctor's degree *must* be completed within a seven year period after matriculation. In unusual circumstances only, such as involuntary military service or extended illness, the department may grant a specified extension of time.

COURSES

F10. EUROPE AND THE UNITED STATES SINCE 1500.

A study of selected topics designed to illustrate the evolution of modern Western society. The emphasis throughout is on the thought patterns underlying institutional developments. *Three semester hours each semester.* Mr. Borg, Mr. Campbell, Mr. Stehlin.

12. HISTORY OF ENGLAND.

A study of selected problems in the historical development of English culture. Emphasis is upon thought and belief in their social and political setting. *Three semester hours each semester.* Mr. Savage.

F14. HISTORY OF ASIA.

A survey of Asian history, emphasizing India, China, and Japan. The first semester covers the period to 1800; the second semester the period since 1800. *Three semester hours each semester.* Mr. Barrow.

141a. THE AMERICAN CHARACTER.

Not offered, 1968-69.

A study of the problem of national character and its historical validity. *Four semester hours.* Mr. Barrow.

208b. TOTALITARIANISM.

A seminar on the origins, ideology, and operation of the German Nazi and Italian Fascist regimes. *Four semester hours.* Mr. Borg.

210. EUROPE, 1648-1815.

The rise of the absolutist state, the old regime, the French Revolution and Napoleon. Attention is given to the rise of science, the Enlightenment and the origins of liberalism and rationalism. Offered in alternate years. *Four semester hours each semester.* Mr. Borg.

211. EUROPE SINCE 1815.

Not offered, 1968-69.

Offered in alternate years. *Four semester hours each semester.* Mr. Stehlin.

213. EUROPEAN DIPLOMATIC HISTORY, 1789-1939.

Four semester hours each semester. Mr. Stehlin.

214a. ORIGINS OF WORLD WAR I.

Seminar focusing on the varying interpretations of the causes of the war, on diplomatic crises that led to it, and on internal political problems that bore indirectly on the outbreak of war. *Four semester hours.* Mr. Stehlin.

215. GERMANY SINCE 1500.

Offered in alternate years. *Four semester hours each semester.*

Mr. Borg.

216b. THE WEIMAR REPUBLIC 1918-1933.

Seminar on Germany's first experiment with democracy, focusing on the Republic's origins in revolution, the conflict of ideologies, its political instability, its culture, and the ultimate success of the Nazi and folkish movements. *Four semester hours.*

Mr. Stehlin.

217b. PROBLEMS IN MODERN EUROPEAN HISTORY.

A seminar on the period from 1500 to 1815, with readings and discussions on selected problems. *Four semester hours.*

Mr. Borg.

220b. TUDOR AND STUART ENGLAND.

Not offered, 1968-69.

The period from 1485 to 1688 with attention to the social backgrounds of English literature and conditions leading to the colonization of America. *Four semester hours.*

221b. VICTORIAN BRITAIN.

Problems in the development of middle-class culture. *Four semester hours.*

Mr. Savage.

222b. BRITAIN IN THE TWENTIETH CENTURY.

Not offered, 1968-69.

An examination of the impact of economic change, mass communication and war upon British society and culture. *Four semester hours.*

Mr. Savage.

231a. THE EXPANSION OF EUROPE.

A survey of the origins and consequences of European expansion, with particular emphasis on English developments. *Four semester hours.*

Mr. Barrow.

232b. ENGLAND IN AMERICA 1600-1700.

An analysis of the process and consequences of the transplantation of Englishmen and English traditions to the new American environment. *Four semester hours.*

Mr. Barrow.

233. THE AMERICAN COLONIES IN THE EIGHTEENTH CENTURY

Not offered, 1968-69.

An analysis of pre-Revolutionary American society, developments in politics and ideology, coming of the Revolutionary War, and transition from colonial to national status. *Four semester hours each semester.*

Mr. Billias.

234a. THE FEDERALIST PERIOD.

Not offered, 1968-69.

A seminar devoted to the ideology, aims, and practices of the Federalists. *Four semester hours.*

Mr. Billias.

234b. THE JEFFERSONIAN PERIOD.

Not offered, 1968-69.

A seminar analyzing the problems of the Jeffersonian party in power, with emphasis upon ideological conflicts, domestic difficulties, and foreign policy problems. *Four semester hours.*

Mr. Billias.

236. THE UNITED STATES 1828-1917.

Emphasizes recent historical interpretations of this period together with an analysis of the contributions of the social and behavioral sciences to the study of American history. *Four semester hours each semester.*

Mr. Grob.

237a. THE UNITED STATES SINCE 1917.

Four semester hours.

Not offered, 1968-69.

Mr. Campbell.

240. AMERICAN THOUGHT AND CULTURE.

Analysis of characteristic documentary expressions at selected moments in American development, with emphasis on the shaping effects of nineteenth century experience on American ways of thinking. *Four semester hours each semester.* Mr. Koelsch.

242b. AMERICAN ECONOMIC HISTORY.

Not offered, 1968-69.

A survey of American economic development from colonial days to the present. *Four semester hours.* Mr. Barrow.

243a. AMERICAN DIPLOMATIC HISTORY, 1778-1941.

Not offered, 1968-69.

Four semester hours. Mr. Hayden.

245a. COMPARATIVE STUDIES IN HISTORY AND GEOGRAPHY.

Comparative analysis of selected literature of historical geography and related fields of history with special attention to methodological differences. *Four semester hours.*

Mr. Koelsch.

245b. HISTORICAL GEOGRAPHY OF THE EASTERN UNITED STATES.

Studies in settlement and resource utilization on the eastern seaboard before 1860. *Four semester hours.* Mr. Koelsch.

274b. THE MODERN FAR EAST.

Not offered, 1968-69.

Primarily international relations in the region since 1895. *Four semester hours.*

Mr. Hayden.

281a. RUSSIA, 1700-1917.

Four semester hours.

Mr. Iatrides.

282b. HISTORY OF THE SOVIET SYSTEM.

A brief survey of Marxist ideology and pre-1917 Russian history and a concentration on the political, economic (non-technical) and social evolution of Russia under the Communist regime. *Four semester hours.* Mr. Iatrides.

290a. TRADITIONAL AFRICA.

An analysis of Africa and Africans prior to European colonization and settlement. *Four semester hours.* Mr. Ford.

290b. MODERN AFRICA.

A consideration of the impact of Europe on Africa in two "typical" settings: South Africa, and one of the English-speaking nations of West Africa. Particular attention is paid to the writing of African history from non-historical sources. *Four semester hours.*

Mr. Ford.

30. DEPARTMENTAL SEMINAR.

A year-long colloquium to introduce the beginning graduate student to the professional study of history. Students read, discuss, and apply examples of different modes of historical analysis. Special attention is given to relevant analytical techniques developed in other disciplines. *Four semester hours each semester.* Mr. Savage, Mr. Barrow, and staff.

31. STUDIES IN THE HISTORY AND INTERNATIONAL RELATIONS OF EUROPE.

Four semester hours each semester.

Mr. Stehlin.

32. STUDIES IN MODERN EUROPEAN HISTORY.

Four semester hours each semester.

Mr. Borg.

33. STUDIES IN MODERN BRITISH HISTORY.

Readings and discussion of recent historical literature dealing with Great Britain in the nineteenth and twentieth centuries. *Four semester hours each semester.* Mr. Savage.

34. STUDIES IN EARLY AMERICAN HISTORY.

Four semester hours each semester. Mr. Barrow.

35. STUDIES IN EIGHTEENTH-CENTURY AMERICAN HISTORY.

Four semester hours each semester. Mr. Billias.

36. STUDIES IN NINETEENTH-CENTURY AMERICAN HISTORY.

Four semester hours each semester. Mr. Grob.

37. STUDIES IN AMERICAN HISTORY.

Four semester hours each semester. Mr. Koelsch.

38. STUDIES IN AFRICAN HISTORY.

Four semester hours each semester. Mr. Ford.

331b. THE MIDDLE PERIOD OF AMERICAN HISTORY, 1815-1860.

A research seminar in which students write several short papers for group discussion and criticism. *Four semester hours.* Mr. Koelsch.

332. THE LITERATURE OF AMERICAN HISTORY: THE NATIONAL PERIOD.

Readings and discussions in the field of United States history since 1815, emphasizing the various interpretations of selected problem areas. *Four semester hours each semester.*

Mr. Grob.

334. INTRODUCTION TO RESEARCH IN AMERICAN COLONIAL HISTORY. Not offered, 1968-69. Historiography of leading American colonial historians from colonial times to the present combined with an examination of bibliographical guides to the field. *Four semester hours each semester.*

Mr. Billias and Mr. McCorison

372a. SEMINAR IN THE HISTORICAL GEOGRAPHY OF NEW ENGLAND.

A research seminar. *Four semester hours.* Mr. Koelsch.

Linguistics

115. MAN AND LANGUAGE.

Not offered, 1968-69.

An introduction to the analysis of the nature and function of human language and its role in the life of individuals and societies. The approach is interdisciplinary, with attention to the points of view of philology, contemporary linguistics, anthropology, psychology and philosophy. The lectures focus on such questions as: What is language? What is the relation between language and thought? To what extent does our language determine how we perceive the world? Why and how do languages change? What other functions does language serve besides communication? Why do we not have a world language? How have linguists achieved an objective, scientific analysis of linguistic systems? What are the limitations of such a science?

The course is designed for the general student who wishes to know more about the nature of the uniquely and universally human institution of language, and for the student or teacher of English or foreign languages who is interested in the light which linguistic science can throw upon the relations between his field and other areas of life and knowledge.

First semester: lectures. Second semester: a seminar in which the members of the group report in depth on problems of their choosing.

Consent of the instructor required. Offered in alternate years. *Three semester hours each semester.* Mr. Reid.

250 HISTORY OF THE ENGLISH LANGUAGE.

See description under English.

Mr. Macris.

260b. SEMINAR: MODERN AMERICAN ENGLISH.

See description under English.

Mr. Macris.

Mathematics

DEPARTMENT FACULTY

John M. Danskin, Ph.D., *Professor of Mathematics, Department Chairman*

John F. Kennison, Ph.D., *Associate Professor of Mathematics*

Zalman Rubinstein, Ph.D., *Associate Professor of Mathematics*

John S. Stubbe, Ph.D., *Associate Professor of Mathematics*

Stephen Baron, Ph.D., *Assistant Professor of Mathematics*

Norman Noble, Ph.D., *Assistant Professor of Mathematics*

Herbert Silverman, Ph.D., *Assistant Professor of Mathematics*

Robert W. Kilmoyer, Jr., B.A., *Instructor in Mathematics*

UNDERGRADUATE PROGRAM

The department offers courses leading to a major in mathematics, courses necessary for the study of physical and certain social sciences and courses for the student wishing to learn the fundamental concepts of mathematics.

The departmental major requires five year-courses in mathematics, including either Mathematics 214 or Mathematics 215. In addition, two year courses must be taken in one of the following areas: biology, chemistry, economics, geography, geology, philosophy, physics, psychology, sociology. Mathematics 13, 113a and 114b should normally be taken in the Sophomore year at the latest. Students showing particular promise in the first semester of Mathematics 12 are encouraged to take Mathematics 114b in their Freshman year. A student who qualifies may undertake Honors work in his Junior and Senior years.

At least 36 semester hours of a major's program must be selected from other than the following fields or courses: All Group A courses, economics 27, 100, 102, 160, 290, geography 247 and psychology 161 and 302.

The courses in Probability and Statistics, Applied Mathematics, and Numerical Analysis include work with the Computer.

GRADUATE PROGRAM

The department offers courses leading to the degrees of Master of Arts and Doctor of Philosophy.

The requirements for the M.A.* are as follows: (1) Mathematics 300; (2) three courses beyond Mathematics 300, except that with the consent of the department, a student may substitute two courses below Mathematics 300 in place of one beyond; (3) Master's preliminary examination; (4) a Master's thesis; and (5) an oral examination.

The requirements for the Ph.D.*, in addition to the general requirements of the Graduate School, are as follows: (1) a student must pass a preliminary examination, which he would normally complete after his first and second years of residence; the examination will be designed to test the student's knowledge and facility in the basic material of algebra, analysis, and topology; (2) the University Language requirement must be passed in either German, French, or Russian; (3) the candidate for the Ph.D. must present an acceptable dissertation which is an original contribution to mathematics, and must pass a final oral examination defending his dissertation.

Graduate scholarships, teaching assistantships, Computing Center assistantships, and fellowships are available.

COURSES

F12. CALCULUS.

Introduction to differential and integral calculus; essential for further study in mathematics as well as for the study of applications in the natural and social sciences. *Four semester hours each semester.*

Mr. Danskin, Mr. Silverman and Staff.

13. INTERMEDIATE CALCULUS.

Geometric and physical applications of integration, sequences and series, three-dimensional analytic geometry, partial differentiation, multiple integrals, and a brief introduction to differential equations. Prerequisite: Mathematics 12 *Four semester hours each semester.*

Mr. Kennison.

*All candidates for the M.A. and Ph.D. degrees in Mathematics will be required to serve as teaching assistants or as assistants in the Computing Center as part of the work for their degrees.

100. UNDERGRADUATE SEMINAR IN MATHEMATICAL MODELS.

Not offered, 1968-69.

This is a seminar type course in which elementary examples of mathematical models are examined. Each student presents a model based on his own mathematical interpretation of any social, political, game-type or other situation. Means of applying mathematical games and models to the social and physical sciences are discussed. Knowledge of Set Theory desirable. Signature required. Not normally open to freshmen. *Two semester hours.*

Mr. Kennison.

113a. INTRODUCTION TO LINEAR ALGEBRA.

Mathematical induction, matrices, determinants, vector spaces. Euclidean vector spaces and quadratic forms. Prerequisite: Mathematics 12. Mathematics majors will normally take Mathematics 113a concurrently with Mathematics 13. *Three semester hours.*

Mr. Baron.

114b. INTRODUCTION TO ANALYSIS.

The real number system, sequences, limits of functions, continuity, uniform continuity, differentiability and elements of point-set topology. Prerequisite: Mathematics 12, or a grade of A— in one semester of Mathematics 12 plus consent of the instructor. Mathematics majors will normally take Mathematics 114b concurrently with Mathematics 13. *Three semester hours.*

Mr. Baron

130a. INTRODUCTION TO COMPUTING.

This first course in computing concentrates on the solution of computational problems through the use of an algorithmic language. FORTRAN is primarily used in order to develop the ability to attack substantial problems. The course also includes an introduction to COBOL and PL/1. *Three semester hours.*

Mr. Stubbe.

131b. COMPUTERS AND PROGRAMMING.

This course is designed to introduce the student to basic computer organization, machine language, programming and the use of assembly language programming systems. In particular SPS and machine language for the 1620 and assembler language for the 360-40 is used extensively. *Three semester hours.*

Mr. Stubbe.

210. MATHEMATICAL STATISTICS.

Elements of probability theory, frequency distribution test of significance, large and small sampling, analysis of variance. Prerequisite: Mathematics 13. *Four semester hours each semester.*

Mr. Stubbe.

212. NUMERICAL ANALYSIS.

Not offered, 1968-69.

Calculus of finite differences, introduction to the theory of interpolation, error analysis, direct and iterative methods for solving equations and systems of equations. Prerequisite: Mathematics 13. *Four semester hours each semester.*

Mr. Stubbe.

214. MODERN ANALYSIS.

Topological, metric and linear methods are studied and used as a basis for a general approach to differentiation, integration and related topics in analysis. Prerequisites: Mathematics 13 and 114b. *Four semester hours each semester.*

Mr. Noble.

215. MODERN ALGEBRA.

Introduction to the theory of groups, rings, integral domain, fields, vector spaces, matrices and related topics. Prerequisite: Mathematics 113a or consent of the instructor. *Four semester hours each semester.*

Mr. Kilmoyer.

220. APPLIED MATHEMATICS.

Ordinary and partial differential equations and their applications, vector analysis, infinite series, line and surface integrals, Bessel functions, Legendre polynomials and Fourier series, introduction to functions of a complex variable. Prerequisite: Mathematics 13. Offered in alternate years. *Four semester hours each semester.* Mr. Rubinstein.

230a. INTRODUCTION TO COMPUTING.

For a description of this course see Mathematics 130a. In addition students electing this course are assigned more advanced projects. Prerequisite: Consent of the instructor. *Three semester hours.* Mr. Stubbe.

231b. COMPUTERS AND PROGRAMMING.

For a description of this course see Mathematics 131b. In addition students electing this course are assigned more advanced projects. Prerequisite: Consent of the instructor. *Three semester hours.* Mr. Stubbe.

290. TOPICS IN ANALYSIS.

Content will be changed from year to year. *Three semester hours each semester.* Staff.

291. TOPICS IN ALGEBRA.

Content will be changed from year to year. *Three semester hours each semester.* Staff.

292. TOPICS IN TOPOLOGY.

Content will be changed from year to year. *Three semester hours each semester.* Staff.

298. HONORS I.

Three semester hours each semester. Staff.

299. HONORS II.

Three semester hours each semester. Staff.

300. FOUNDATIONS OF MATHEMATICS.

Three semester hours each semester. Mr. Kennison.

316. FUNCTIONS OF A COMPLEX VARIABLE.

Analytic functions, line integrals, conformal mapping. Riemann surfaces. Prerequisite: Mathematics 214 or consent of the instructor. Offered in alternate years. *Three semester hours each semester.* Mr. Silverman.

318. FUNCTIONS OF A REAL VARIABLE.

Not offered, 1968-69. Foundations of the real number system, algebra of sets, transfinite arithmetic, metric spaces, topological spaces, sequences and series, measure theory, differentiation and integration and functional analysis. Prerequisite: Mathematics 214; corequisite: Mathematics 300. *Three semester hours each semester.*

321. ALGEBRAIC TOPOLOGY.

Introduction to algebraic topology including homotopy theory, singular and simplicial homology, and application to general spaces. Prerequisite: Mathematics 214 and 215. *Three semester hours each semester.* Mr. Danskin.

323. UNIFORM SPACES. Not offered, 1968-69.
Elementary theory, function spaces and the exponential law, mappings into polyhedra, compactifications, fine spaces, dimension theory. Prerequisite: Mathematics 318 or consent of the instructor. *Three semester hours each semester.* Mr. Noble.
325. ADVANCED MODERN ALGEBRA.
Galois theory, group theory, Wedderburn structure theorems for rings and linear algebras, introduction to algebraic number fields. Prerequisite: Mathematics 215; corequisite: Mathematics 300. *Three semester hours each semester.* Mr. Kilmoyer.
326. SELECTED TOPICS IN COMPLEX ANALYSIS. Not offered, 1968-69.
Topics selected from the theory of univalent and multivalent functions, geometric function theory, zeros of polynomials and extremal polynomials. Prerequisites: Mathematics 316 or consent of the instructor. *Three semester hours.* Mr. Rubinstein.
330. MASTER'S THESIS. Staff.
333. TOPOLOGICAL FUNCTION SPACES.
Various topologies for sets of functions are studied and their properties determined. Emphasis on the exponential laws. Ascoli-Arzelà theorems, and applications to point-set topology. Prerequisites: Mathematics 318 or consent. *Three semester hours each semester.* Mr. Noble.
335. SELECTED TOPICS IN ALGEBRA. Not offered, 1968-69.
Prerequisites: Mathematics 325 or consent of the instructor. *Three semester hours.*
341. DIFFERENTIAL EQUATIONS.
Ordinary differential equations, theory and techniques of solutions. Partial differential equations. Fourier transform, distributions and their applications. *Three semester hours each semester.* Mr. Rubinstein.
358. CATEGORY THEORY. Mr. Baron.
Three semester hours each semester.
376. REPRESENTATION THEORY OF FINITE GROUPS. Not offered, 1968-69.
Prerequisite: Mathematics 325 and consent of the instructor. *Three semester hours each semester.*
381. SEMINAR IN COMPLEX VARIABLE. Staff.
Three semester hours each semester.
382. SEMINAR IN ABSTRACT ANALYSIS AND POINT-SET TOPOLOGY. Staff.
Three semester hours each semester.
383. SEMINAR IN ALGEBRA. Staff.
Three semester hours each semester.
390. READINGS IN MATHEMATICS.
Reading of the mathematical literature related to the student's research program. *Three semester hours each semester.* Staff.
391. RESEARCH IN MATHEMATICS.
Direction of the Ph.D. dissertation. *Three semester hours each semester.* Staff.

Music

DEPARTMENT FACULTY

Relly Raffman, A.M., *Professor of Music, Department Chairman*

Wesley M. Fuller, M.M., *Associate Professor of Music*

THE PHILHARMONIA WOODWIND QUINTET (*Artists-in-residence*)

John Miller, M.M., *Assistant Professor (Affiliate) of Bassoon*

Raymond Toubman, M.A., *Assistant Professor (Affiliate) of Oboe*

William Wrzesian, M.M., *Assistant Professor (Affiliate) of Clarinet*

Elinor Preble, B.M., *Assistant Professor (Affiliate) of Flute*

David Ohanian, B.M., *Assistant Professor (Affiliate) of French Horn*

UNDERGRADUATE PROGRAM

The department offers courses designed to teach students how to listen to music intelligently, to develop a comprehension of music on its own terms and to acquaint students with representative works from various periods of music history.

To be admitted to the music major, a student must demonstrate through a written examination a knowledge of the fundamentals of music, and he must demonstrate no later than the beginning of the sophomore year the ability to read and perform simple keyboard works.

The music major includes the following courses:

Theory: 121a and b (to be taken in the Freshman year). 122a, 123b, 124a and 125b.

Music History: 12a and 112a; 13b and 113b; 14a and 114a; 15b and 115b; 16b or 17b.

Associated studies: a one-semester course in either art or esthetics.

In the senior year, students who wish to emphasize composition should elect Music 118; students who wish to emphasize music history should elect Music 128. In addition, all majors must satisfactorily complete 36 semester hours outside of Philosophy 13b (Esthetics), courses in fine arts, courses in literature and courses in European history.

Beginning in the fall semester of 1969 individual instruction in flute, oboe, clarinet, french horn and bassoon will be offered by the department. Payment for lessons is to be arranged on a semester basis, with practice facilities available at a nominal rental fee.

COURSES

F10a. INTRODUCTION TO MUSIC.

Designed for the non-major, this course is a prerequisite for entrance into Music 12 through 17, inclusive. No credit toward the major allowed. Open to freshmen. *Three semester hours.* Staff.

120a. INTRODUCTION TO MUSIC.

Special topics in music pedagogy. For majors only. *One semester hour.*

Staff.

F121a. FUNDAMENTALS OF MUSIC.

Notation, ear-training, sight-singing and elementary melodic and harmonic organization. *Three semester hours.* Mr. Raffman.



THE PHILHARMONIA WOODWIND QUINTET

F121b. PRIMARY THEORY.

Open to freshmen. Prerequisite: 121a or consent of instructor. *Three semester hours.*

Mr. Raffman.

12a. MEDIEVAL AND RENAISSANCE PERIODS.

A survey of music before 1600. Prerequisite: 10a. Offered in alternate years. *Three semester hours.*

Mr. Fuller.

112a. SPECIAL TOPICS IN MEDIEVAL AND RENAISSANCE MUSIC.

Independent study. Required of all music majors, but open to anyone concurrently enrolled in 12a. *One semester hour.*

Mr. Fuller.

122a. THEORY: MODAL COUNTERPOINT.

Offered in alternate years. Prerequisite: 121a. *Three semester hours.*

Mr. Fuller.

F13b. BAROQUE AND CLASSICAL PERIODS.

A survey of music from 1600 to 1800. Offered in alternate years. *Three semester hours.*

Staff.

113b. SPECIAL TOPICS IN BAROQUE AND CLASSICAL MUSIC.

Independent study. Required of all Music Majors, but open to anyone concurrently enrolled in 13b. *One semester hour.*

Staff.

123b. THEORY: 18TH CENTURY COUNTERPOINT.

Canon and Fugue. Prerequisite: 121a. Offered in alternate years. *Three semester hours.*

Mr. Raffman.

14a. NINETEENTH CENTURY MUSIC.

Not offered, 1968-69.

A survey of the Romantic Period. Offered in alternate years. Prerequisite: 10a. *Three semester hours.*

Mr. Raffman.

114a. SPECIAL TOPICS IN 19TH CENTURY MUSIC.

Not offered, 1968-69.

Independent study. Required of all Music Majors, but open to anyone concurrently enrolled in 14a. *One semester hour.*

Mr. Raffman.

124a. THEORY: 19TH CENTURY PRACTICE.

Not offered, 1968-69.

Prerequisite: 121a. Offered in alternate years. *Three semester hours.*

Mr. Fuller.

F15b. TWENTIETH CENTURY MUSIC.

Not offered, 1968-69.

Prerequisite: 10a. Offered in alternate years. *Three semester hours.*

Staff.

115b. SPECIAL TOPICS IN 20TH CENTURY MUSIC. Not offered, 1968-69.
Independent study. Required of all music majors, but open to anyone concurrently enrolled in 15b. *One semester hour.* Staff.

125b. THEORY: 20TH CENTURY PRACTICE. Not offered, 1968-69.
Prerequisite: 121a and 124a. Offered in alternate years. *Three semester hours.* Staff.

F16b. CHORAL MUSIC. Not offered, 1968-69.
Selected choral compositions from all periods of music history will be analyzed with score and recording. Because the study of performance problems is of key importance, a number of the works will be performed by the class. Prerequisite: 10a, or permission of the instructor. Offered in alternate years. *Three semester hours.* Mr. Fuller.

F17b. OPERA.
With the help of translated librettos, recordings and selected readings, a study is made of a group of operas representing all periods of music history, with emphasis on the many solutions to the combination of music and drama. Prerequisite: 10a. Offered in alternate years. *Three semester hours.* Mr. Fuller.

18. INSTRUMENTAL INSTRUCTION. Not offered, 1968-69.
Academic credit may be arranged for students majoring in music according to the particular program of instruction undertaken and with the consent of the department. Staff.

118. SENIOR TUTORIAL IN MUSIC HISTORY. Staff.
Three semester hours each semester.

128. SENIOR TUTORIAL IN COMPOSITION. Staff.
Three semester hours each semester.

Philosophy

DEPARTMENT FACULTY

Robert N. Beck, Ph.D., *Professor of Philosophy, Chairman*
Jefferson A. White, Ph.D., *Associate Professor of Philosophy*
Gilbert S. Markle, Ph.D., *Assistant Professor of Philosophy*
Walter E. Wright, M.A., *Assistant Professor of Philosophy*

UNDERGRADUATE PROGRAM

The department offers courses to students who wish to broaden their perspective and trace relations among the various fields of knowledge and to students who wish to major in philosophy.

The major consists of at least 24 semester hours in philosophy and 18 additional hours in related fields. The latter are determined according to the student's special interest.

In addition, at least 36 semester hours of a major's program must be selected from *outside* the following fields: English, history, mathematics, music, philosophy, psychology and sociology. Course programs for majors require approval of the departmental chairman.

COURSES

F11a. LOGIC AND SCIENTIFIC METHOD.

Principles of valid reasoning and inductive methods and their application to problems of the natural and social sciences. Consideration of the relations between logic and problems of value. *Three semester hours.* Mr. Beck.

F12a. PROBLEMS OF PHILOSOPHY.

Nature and method of philosophy. Application of philosophical method to contemporary personal and social problems. Detailed analysis of some typical problems in various fields of philosophy. *Three semester hours.* Mr. Markle.

F12b. PROBLEMS OF PHILOSOPHY.

Mr. Beck.

Philosophy 12 series is organized in four semester-courses, I, II, III and IV.

121a. HISTORY OF ANCIENT PHILOSOPHY I.

Movements of philosophical thought from their origins with the early Greeks through Plato and Aristotle. Not open to Freshmen. *Three semester hours.* Mr. White.

122b. HELLENISTIC AND MEDIEVAL PHILOSOPHY II.

Not offered, 1968-69.

Developments in Hellenistic and medieval philosophy from Epicureanism, Stoicism, Skepticism and Neo-Platonism through Augustine, Aquinas, and William of Occam to the attack on scholasticism. Prerequisite: Philosophy 121. *Three semester hours.* Mr. White.

123b. HISTORY OF MODERN PHILOSOPHY III.

Major thinkers and philosophical movements from the beginnings of the modern period in Descartes to the 19th century. Prerequisite: three semester hours in philosophy or History 10. *Three semester hours.* Mr. Markle.

124a. HISTORY OF RECENT PHILOSOPHY IV.

Recent developments in philosophy, with emphasis on the historical roots of contemporary thought. Prerequisite: Philosophy 123b. *Three semester hours.* Mr. Markle.

13a. PROBLEMS OF ETHICS.

Consideration of important ethical theories to acquaint the student with problems and scope of ethics and to aid him in the formulation of an ethical outlook. Open to juniors and seniors. *Three semester hours.* Mr. Beck.

13b. SOCIAL PHILOSOPHY.

Principles underlying social structure and functions. Examination of the goals, purposes, norms and ideals of social process, and the relation of that process to the individual good. Open to juniors and seniors. *Three semester hours.* Mr. Beck.

14a. KIERKEGAARD AND NIETZSCHE.

Investigation of the roots of contemporary existential thought in the nineteenth century through the analysis of major writings by Soren Kierkegaard and Friedrich Nietzsche. Emphasis on their doctrines of knowledge, existence and man. Not open to freshmen. *Three semester hours.* Mr. Wright.

14b. NINETEENTH AND EARLY TWENTIETH CENTURY GERMAN PHILOSOPHY.

Trends in philosophy during this period considered as a background for understanding recent philosophy. Philosophers to be studied include Fichte, Hegel, Schopenhauer, Nietzsche, Marx, Engels and Comte. Prerequisite: Philosophy 123b. *Three semester hours.* Mr. Wright.

15a. PHILOSOPHY OF RELIGION.

The nature of religion as revealed by the examination of representative forms of religious experience. Emphasis is placed on the effect of contemporary knowledge on the understanding of the religious dimension. Open to juniors and seniors. Prerequisite: three semester hours in philosophy. *Three semester hours.* Mr. Wright.

15b. HISTORY OF AMERICAN PHILOSOPHY.

Not offered, 1968-69.

Survey of important philosophical ideas in America with emphasis on their relationship to American experience. Prerequisite: three semester hours in philosophy. *Three semester hours.* Mr. Beck.

16a. ESTHETICS.

The nature of art, the characteristics of esthetic experience, and the relation of art to the human enterprise as a whole. Special reference is made to representative figures in contemporary philosophy such as Santayana, Veron, Dewey, Weitz, Macdonald, Bosanquet, Langer, Hume, and T. H. Greene. Open to juniors and seniors. Prerequisite: Three semester hours in philosophy. *Three semester hours.* Mr. White.

16b. METAPHYSICS.

Not offered, 1968-69.

Clarification of the nature of metaphysical thinking and views of representative contemporary philosophers on the nature of space, time, causality, matter, force, self-identity, mind, body, and freedom. Open to juniors and seniors. Prerequisite: Philosophy 121 and 123. *Three semester hours.* Mr. White.

17a. PHILOSOPHY OF SCIENCE.

Problems of scientific explanation as seen in the evolving context of classical physics. Emphasis on 20th century developments. Prerequisite: three semester hours in philosophy. *Three semester hours.* Mr. Markle.

17b. PHILOSOPHY OF SCIENCE II.

A more advanced treatment of selected problems in scientific explanation. Both the 'context of verification' and the 'context of discovery' are analyzed with particular regard to the cognitive status of theories. Some symbolic logic is required. Prerequisites: six semester hours in both philosophy and a natural science. Philosophy 17a recommended. *Three semester hours.* Mr. Markle.

201-4. SEMINAR IN PHILOSOPHY.

Advanced study of topics of central importance to philosophy. Whitehead, Kant, theory of value, problem of justice, mind and body. Prerequisites: two year-courses in philosophy, including 121 and 122. *Three semester hours each semester.* Staff.

299. HONORS IN PHILOSOPHY.

Advanced individual study of philosophic problems. Honors includes the preparation of an acceptable thesis and a comprehensive examination. Prerequisite: consent of the department. *Normally, six semester hours.* Staff.

Physics

DEPARTMENT FACULTY

Roy S. Anderson, Ph.D., *Professor of Physics, Department Chairman*

Earl E. Hays, Ph.D., *Professor (affiliate) of Physics*

C. Alton Coulter, Ph.D., *Associate Professor of Physics*

Roger P. Kohin, Ph.D., *Associate Professor of Physics**

John A. Davies, Ph.D., *Assistant Professor of Physics*

Joseph P. McEvoy, Ph.D., *Assistant Professor of Physics*

*On leave of absence, 1968-69.

UNDERGRADUATE PROGRAM

The undergraduate program in physics is designed to prepare a student for a career in physics, to supplement the program of another science, or to introduce the field, as a part of liberal studies.

The physics major will provide a strong foundation for students preparing for graduate study or will assure proper training for teaching and professional work in physics. The major consists of Physics 101, 150a, 160b, 200, 206a, 207b, Mathematics 13, six additional semester hours in mathematics, beyond Mathematics 13, and six semester hours in chemistry, usually Chemistry 11. For students entering the University beginning September 1966, and thereafter, a revised physics major curriculum is offered. This major consists of Physics 12b, 130a, 140b, 145b, 150a (new), 155a, 160b, 200a, 202a, 207a, six additional semester hours in physics, Mathematics 13 and six additional semester hours in mathematics beyond Mathematics 13. Majors are strongly urged to take two years of either German or Russian. In addition, at least 36 semester hours of a major's program must be taken from other than Group A courses.

Qualified students are encouraged to participate in the physics honors program. During the junior and senior year the honors student conducts an individual experimental or theoretical research project under the guidance of a faculty member. This work is submitted to the Department as an honors thesis. Recommendation for a degree with Honors in Physics is determined by the quality of the thesis and the performance of the student on a comprehensive examination in physics. An Honors candidate must maintain an overall B— average in physics and mathematics courses. Further information about the Honors Program is available from the Department.

GRADUATE PROGRAM

Graduate programs are offered leading to the degrees of Master of Arts and Doctor of Philosophy. A doctoral program in Chemical Physics, offered jointly with the Department of Chemistry, is also available.

Departmental research is being conducted in both theoretical and experimental physics. There are theoretical research programs in solid state physics and elementary particles. Experimental programs include studies of the metallic state at low temperatures and the use of electron spin resonance spectroscopy to investigate radiation damage in solids and the nature of ferroelectricity. In addition, theoretical and experimental research in oceanography is offered in cooperation with the Woods Hole Oceanographic Institution.

Graduate scholarships, teaching and research assistantships, and various research fellowships are available. Information on these awards will be furnished on request to the

Department of Physics. First year graduate students usually receive teaching assistantships and a tuition scholarship. Following the first academic year, graduate students may be awarded twelve-month research assistantships with tuition scholarships. Research conducted while on research assistantships may constitute thesis or dissertation work.

All graduate students are required to pass the Physics Qualifying Examination which is designed to test the student's ability to solve problems at the upper-class undergraduate level. One year of teaching apprenticeship, or its equivalent, is required of all candidates for advanced degrees.

In addition to the requirements of the Graduate School, students in the M.A. program are generally responsible for the material covered in Physics 301, 304, and 305.

Students in the Ph.D. program, in addition to satisfying the Graduate School requirements, will normally pass courses totalling at least 48 semester hours. This includes credit for seminars, a maximum of twelve semester hours for research, and at least eighteen semester hours in courses given by other departments, twelve of which must be in the field of mathematics. Students are responsible for the material covered in Physics 301, 304, and 305.

Students in the doctoral program take Part I of the Physics Preliminary Examination no later than the beginning of the third year of graduate study. This is a comprehensive written and oral examination covering classical and modern physics at the graduate level. Part II is an oral examination of a research proposal presented by the student at a departmental colloquium.

Doctoral students must pass the University language examination in either German or Russian. This examination is normally taken in the fall of the second year of graduate study.

A detailed description of graduate programs and requirements is available from the Department of Physics.

COURSES

F10a. CONCEPTS OF CLASSICAL PHYSICS.

An introduction to the theories and concepts of mechanics, thermodynamics, and electrodynamics. Three lectures, one laboratory, and one conference per week. Prerequisite: consent of the instructor or three years of high school mathematics, including algebra and trigonometry. *Four semester hours.*

Mr. Davies.

F11b. CONCEPTS OF MODERN PHYSICS.

An introduction to the theories of relativity, statistical mechanics, and quantum mechanics, with elementary applications. Normally a terminal course. Students intending to take more than one year of physics should take Physics 12b following Physics 10a. Three lectures, one laboratory, and one conference per week. Prerequisite: Physics 10a. *Four semester hours.*

F12b. MECHANICS AND RELATIVITY.

Particle dynamics in inertial reference frames. Relativity. Required for a major in physics. Prerequisite to all more advanced courses in physics. Three lectures, one laboratory, and one conference per week. Prerequisite: Physics 10a or equivalent, with Mathematics 12 concurrently. *Four semester hours.*

Mr. Kohin.

130a. ELECTRICITY AND MAGNETISM.

Phenomenological development of Maxwell's equations. Electric and magnetic properties of materials. Electric circuit theory. Three lectures, one laboratory, and one conference per week. Prerequisite: Physics 12b with Mathematics 13 concurrently. *Four semester hours.*

140b. MODERN PHYSICS.

A survey course treating contemporary ideas. An introduction to the quantum theory, with applications to atoms, nuclei, particles and the solid state. Prerequisite: Physics 130a. *Three semester hours.* Mr. Anderson.

145b. MODERN PHYSICS LABORATORY.

Experiments in modern physics. Co-requisite: Physics 140b. One laboratory per week. *One semester hour.* Mr. Anderson.

150a. WAVES AND OSCILLATIONS.

Oscillating mechanical and electrical systems. Electromagnetic and matter waves. Applications of the Schroedinger wave equation. Prerequisites: Mathematics 13 and Physics 130a. *Three semester hours.*

155a. WAVES AND OSCILLATIONS LABORATORY.

Experiments involving oscillating systems. The experimental study of optics. Co-requisite: Physics 150a. *One semester hour.*

160b. ELECTROMAGNETISM.

The mathematical theory of electricity and magnetism. Fields and potentials. Maxwell's equations. Electromagnetic waves. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Anderson.

200. ADVANCED PHYSICAL MEASUREMENTS.

Laboratory in atomic, molecular, nuclear and solid-state physics. Three hours each week. *One semester hour each semester.*

202a. THERMODYNAMICS AND STATISTICS.

The laws of thermodynamics. Kinetic theory and particle statistics. Four lectures. Prerequisite: Mathematics 13 and Physics 140b. Offered in alternate years. *Four semester hours.* Mr. McEvoy.

205a. ELECTRONIC DEVICES AND CIRCUITS.

Not offered, 1968-69.
Principles of electron tubes and transistors, with emphasis on design of electronic circuits. Three lectures and one laboratory per week. Prerequisite: consent of the instructor. Offered in alternate years. *Four semester hours.* Mr. Anderson.

206a. MODERN PHYSICS.

An introduction to the quantum nature of molecules, atoms and nuclei. Special relativity. The old quantum theory. The correspondence principle. Wave-particle duality. The uncertainty principle. The wave equation. Prerequisite: Physics 160b and Mathematics 13 or consent of the instructor. *Three semester hours.*

207b. QUANTUM PHYSICS.

An introduction to quantum wave mechanics. Solutions of the Schroedinger equation. Operator techniques. Angular momenta. Approximation methods. Spectroscopy. Prerequisite: Physics 206a. *Three semester hours.* Mr. Coulter.

208b. INTRODUCTION TO THE SOLID STATE.

Crystal structure: symmetry and space groups. Chemical bonding: ionic and covalent crystals. Thermal and elastic properties. The band theory of metals and semi-conductors. Dielectric and magnetic properties. Low temperature properties. Superconductivity. Prerequisite: Mathematics 13 and the consent of the instructor. Offered in alternate years. *Three semester hours.* Mr. McEvoy.

209a. INTRODUCTION TO THE NUCLEUS.

Not offered, 1968-69.

Waves and particles, natural radioactivity, detection instruments, nuclear structure, nuclear transformations, neutron physics, fission and fusion, mesons, pions, and strange particles. Three lectures and one laboratory per week. Prerequisite: Physics 140b or consent of the instructor. Offered in alternate years. *Four semester hours.*

230. SPECIAL TOPICS IN PHYSICS.

Independent studies in physics to provide for special needs. Individual experimental or theoretical projects are encouraged. *Variable credit.* Staff.

235. HONORS.

Independent experimental or theoretical research in physics. *Three semester hours each semester.* Staff.

301. ADVANCED MECHANICS.

Lagrangian and Hamiltonian formulations. Kinematics and dynamics of rigid body motion. Canonical transformations. Hamilton-Jacobi theory. Introduction to statistical mechanics. *Three semester hours each semester.*

304. ELECTRODYNAMICS.

Maxwell's equations. The special theory of relativity. Electromagnetic radiation. Boundary value problems. Lagrangian formulation of electrodynamics. *Three semester hours each semester.* Mr. Coulter.

305. QUANTUM MECHANICS.

The superposition principle. Linear vector spaces. Electron spin. The Schrödinger and Heisenberg pictures. Angular momentum. Scattering theory. Time-independent and time-dependent perturbation theories. Many particle systems. Non-relativistic quantum field theory. Prerequisite: Physics 207 or equivalent. *Four semester hours each semester.*

Mr. Davies.

308. THEORY OF ATOMIC AND MOLECULAR SPECTRA.

Not offered, 1968-69.

The electronic configuration of atoms: the Pauli principle and the building-up principle. Fine structure and the spinning electron. The Zeeman and Paschen-Back effects. Nuclear effects: hyperfine structure. The structure and properties of molecules as revealed by rotational, vibrational, and electronic spectra. Covalent and ionic bonds. Prerequisite: Physics 305 or consent of instructor. *Two semester hours each semester.* Mr. Kohin.

309. MAGNETIC RESONANCE.

Not offered, 1968-69.

The theory of the electron spin and nuclear magnetic resonance experiments, particularly in solids. The spin Hamiltonian and the magnetic interaction between particles. Chemical bonds and their description by the molecular orbital method. Prerequisite: Physics 308. *Two semester hours each semester.* Mr. Kohin.

310. QUANTUM ELECTRODYNAMICS. Not offered, 1968-69.
The quantization of relativistic fields. Electron and photon fields. Interactions of fields. The S-matrix. Feynman diagrams. Renormalization. Applications. Prerequisite: Physics 305 or equivalent. *Two semester hours each semester.* Mr. Davies.

311. ELEMENTARY PARTICLE THEORY. Not offered, 1968-69.
The present state of experimental knowledge. S-matrix theory. Kinematics of scattering processes. Regge poles. Approximate symmetries of strong interactions. Prerequisite: Physics 305 or equivalent. *Two semester hours each semester.* Mr. Coulter.

312b. APPLICATIONS OF GROUP REPRESENTATIONS TO PHYSICS. Not offered, 1968-69.
Representation theory for finite groups. Application to crystallographic point groups. Representation of compact continuous groups. The rotation group with applications to atomic structure. $SU(n)$ with applications to elementary particle theory. Finite-dimensional representations of the Lorentz group. Prerequisite: Physics 207. *Three semester hours.* Mr. Coulter.

313. THE METALLIC STATE AT LOW TEMPERATURES. Mr. McEvoy.

330. CURRENT PROBLEMS IN PHYSICS.
A specific topic in experimental physics is considered at the research level. Topics are selected on the basis of current interest. *Variable credit.* Staff.

335. TOPICS IN THEORETICAL PHYSICS.
An area of theoretical physics, chosen principally for students conducting theoretical research. Topics selected, as required, to emphasize special research areas or methods. *Variable credit.* Staff.

340. COLLOQUIUM.
Weekly lectures on various topics of current interest. *One semester hour each semester.* Staff.

350. RESEARCH.
Variable credit. Staff.

Psychology

DEPARTMENT FACULTY

Seymour Wapner, Ph.D., *G. Stanley Hall Professor of Genetic Psychology, Department Chairman*

Robert W. Baker, Ph.D., *Professor of Psychology*

Tamara Dembo, Ph.D., *Professor of Psychology*

Bernard Kaplan, Ph.D., *Professor of Psychology*

Donald M. Krus, Ph.D., *Professor of Psychology**

Morton Wiener, Ph.D., *Professor of Psychology*

Joachim F. Wohlwill, Ph.D., *Professor of Psychology**

Roger Bibace, Ph.D., *Associate Professor of Psychology*

Kenneth W. Terhune, Ph.D., *Associate Professor of Psychology*

Leonard E. Cirillo, Ph.D., *Assistant Professor of Psychology*

James D. Laird, Ph.D., *Assistant Professor of Psychology*

Neil O. Rankin, Ph.D., *Assistant Professor of Psychology*

David Stea, Ph.D., *Assistant Professor of Geography and Psychology*

Donald G. Stein, Ph.D., *Assistant Professor of Psychology*

David A. Stevens, Ph.D., *Assistant Professor of Psychology*

Ina C. Uzgiris, Ph.D., *Assistant Professor of Psychology*

Jacques Vonèche, Ph.D., *Assistant Professor of Psychology*

Clemens E. Benda, M.D., *Professor (Affiliate) of Psychology*

Harold Goodglass, Ph.D., *Professor (Affiliate) of Psychology*

David Moriarty, M.D., *Professor (Affiliate) of Psychology*

Donald Broverman, Ph.D., *Associate Professor (Affiliate) of Psychology*

Richard Rablen, Ph.D., *Associate Professor (Affiliate) of Psychology*

William Vogel, Ph.D., *Associate Professor (Affiliate) of Psychology*

Arthur J. Bindman, Ph.D., *Lecturer in Psychology*

Norman Geschwind, M.D., *Lecturer in Psychology*

Edward L. Klaiber, M.D., *Lecturer in Psychology*

Oscar Resnick, Ph.D., *Lecturer in Psychology*

Peter H. Wolff, M.D., *Lecturer in Psychology*

Melvin Barton, Ph.D., *Psychology Consultant to the Psychological Services Center*

Polly Deweese, M.S., *Social Work Consultant to the Psychological Services Center*

Victor H. Pentlarge, M.D., *Psychiatry Consultant to the Psychological Services Center*

Malcolm Sills, M.D., *Psychiatry Consultant to the Psychological Services Center*

*On leave of absence, 1968-1969.

UNDERGRADUATE PROGRAM

The department offers courses for students majoring in psychology, majors in allied fields and students wishing an orientation to the field of psychology as part of their general education.

Psychology 11 is prerequisite to all other psychology courses. Majors are required to take Psychology 11 and a minimum of two laboratory courses (Psych. 201a, 203b, 204a, 205a, 206a, 210b, 211a, 223b, 236b). Of the two courses at least one must be 203b, 204a, 205a or 223b. Permission of the instructor is required for each course in the Experimental Psychology grouping. In addition, each of these courses requires Psychology 160b or Psychology 260a or their equivalent; this requirement may be waived with permission of the instructor. Students preparing for graduate work should obtain a reading knowledge of French, German or Russian.

In addition, at least 36 semester hours of a major's program must be selected from other than the following fields or courses: All biology, education, linguistics, philosophy, psychology and sociology courses; and selected courses from economics, geography, government and mathematics. (See department brochure for specific courses.)

GRADUATE PROGRAM

The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. A Master of Arts degree, based on an experimental thesis, ordinarily completed within the first two years of graduate work, is a requirement for admission to candidacy for the Ph.D. degree. In addition, there is the requirement that every graduate student participate in the Teaching Apprenticeship Program of the department. Credit hours are not ordinarily assigned to graduate courses; however, all graduate courses carry the equivalent of three semester hours each semester.

Master of Arts: The customary program is five year (ten semester) courses—including experimental method in psychology (301a), statistical methods (302) and seven additional semester courses—supplemented by the writing of a thesis in the area of special interest.

Doctor of Philosophy: The student is required to pass with distinction five courses during the first year of graduate study and a minimum of four courses during the second year. The Departmental language requirement must be met by a knowledge of French, German or Russian. He is required, normally at the end of the second year, through written examination, to demonstrate his competence in psychology as a whole and in an area of specialization. In addition, the student is required to demonstrate his ability to conduct independent research as evidenced by the presentation of an acceptable dissertation. Research for the dissertation should normally be completed during the fourth year at the University; however, the length of the program will vary depending upon individual circumstances. At a final oral examination a student is required to defend his dissertation and to show his competence in the general field of psychology and in his area of specialization.

The overall aim of the graduate program is to provide the student with a general, integrated background covering the various areas of psychology. Within this emphasis more specialized training—with special stress on experimental analysis—is available in the following areas: perception, physiological learning, thinking and problem-solving, language, social, and personality. The department maintains, in addition to general experimental laboratories, specialized facilities for research and training in comparative, learning, physiological, perception, child and social psychology.

There are also three more formalized programs which provide specialized training in the areas of Clinical, Developmental and Rehabilitation Psychology.

Clinical Psychology Program. The department offers a four-year A.P.A.-approved program in clinical psychology leading to the degree of Doctor of Philosophy. Beyond

the standards of proficiency in the general field of psychology expected of all students, the student in the Clinical Program will be required to demonstrate special mastery in the understanding of concepts in the clinical area and in the use of clinical methods. One year of internship is included in this four-year program. Provision is made for a wide variety of practical experiences in cooperating institutions, clinics and agencies. There are over 20 institutions and agencies in Worcester, Boston, Providence and surrounding areas which cooperate in providing such practicum and research facilities. In addition to the one-year internship, all students in the Clinical Program obtain a variety of practicum experiences in the Clark University Psychological Services Center throughout their enrollment in the graduate program. For further information, write to the director of the program: *Dr. Morton Wiener*.

The Psychological Services Center, directed by *Dr. Roger Bibace*, is operated in connection with the Clinical Psychology Program. For further information concerning the Center, see that section in the catalog.

Post-doctoral training in clinical psychology is available. It aims to provide opportunities for clinical psychologists to develop further their clinical and research skills. Facilities of the Department, of Gardner State Hospital, and other agencies are utilized.

Developmental Psychology Program. This program is designed to train students in the comparative and experimental analysis of behavioral development. It emphasizes not only the study of human development over a wide age range, but also stresses the application of developmental principles, concepts and methods to problems of general psychology, psychopathology, social psychology, etc. For further information, write to the director of the program: *Dr. Bernard Kaplan*.

Rehabilitation Research Training Program. In conjunction with all other areas of specialization, rehabilitation research training is available. This training is designed to prepare students for investigation of psychological problems as they occur in everyday life. Emphasis on development of novel techniques and concepts is a main feature of the training. An integral part of the program is an apprenticeship-practicum during which the various phases of research in real-life settings are examined under the guidance of a staff member. This program is especially pertinent to those who are interested in social-emotional and value problems of handicapped and non-handicapped people. For further information, write to the director of the program: *Dr. Tamara Dembo*.

Financial Aid. In addition to University scholarships, fellowships, teaching assistantships, and stipends, the department has available such forms of financial support as United States Public Health Service and Rehabilitation Services Administration training stipends, Veterans Administration assistantships and stipends, NDEA and NSF Traineeships, and research assistantships.

THE HEINZ WERNER INSTITUTE OF DEVELOPMENTAL PSYCHOLOGY

Associated with the department is the Heinz Werner Institute of Developmental Psychology, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on post-doctoral levels in the comparative-developmental approach to behavior. Information concerning post-doctoral work at the Institute may be obtained by writing to *Dr. Bernard Kaplan*.

COURSES

F11a. GENERAL PSYCHOLOGY.

Introduction to the principles of human behavior. *Three semester hours.* Mr. Wapner.

F11b. GENERAL PSYCHOLOGY.

Introduction to the principles of human behavior. *Three semester hours.*

Mr. Kaplan and staff.

12a. PSYCHOANALYSIS AND THE CONCEPT OF MAN.

Psychoanalysis will be considered in relation to contemporary concepts of man. Discussions will center on the implications of psychoanalytic thought for the following areas: mental illness, childrearing practices, educational philosophy, learning theory, religion, philosophy, art, law, prejudice, and war. *Two semester hours.*

Mr. Moriarty.

103a, b. ABNORMAL PERSONALITY.

An analysis of the concepts used to explain development of the abnormal personality and a survey of the major types of deviant behavior. Prerequisite: Psychology 172a. *Three semester hours.*

Mr. Wiener.

125a. PSYCHOLOGY OF LANGUAGE.

Not offered, 1968-69.

A psychological analysis of the use of symbols in language, dreams, and myth. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Kaplan.

126b. MYTH, DREAM, AND SYMBOL.

An examination of the structure, function, causes, and interpretations of mythical thinking, dream thinking, and symbolic activity in general. *Three semester hours.*

Mr. Kaplan.

130b. PSYCHOLOGY OF LEARNING.

Methods and findings in the study of learning are discussed, with emphasis on their relation to theories of learning. Selected controversial issues is examined. *Three semester hours.*

Mr. Stevens.

150a. INTRODUCTION TO CHILD PSYCHOLOGY: Physical and Intellectual Development.

The normal development of the child from infancy up to adolescence, with emphasis on the areas of physical and motor development, cognitive processes and language, and emotional and fantasy life. *Three semester hours.*

Mrs. Uzgiris.

150b. INTRODUCTION TO CHILD PSYCHOLOGY: Personality and Social Development of the Child.

The development of the child's personality and interpersonal behavior, in relation to family, peer group and culture. *Three semester hours.*

Mr. Cirillo.

160b. QUANTITATIVE METHODS.

Introduction to basic techniques of descriptive and inferential statistics. Primarily for sophomores with a good background in algebra, and prospective majors intending to spend the junior year away from Clark. *Three semester hours.*

Mr. Broverman.

170a, b. SOCIAL PSYCHOLOGY.

The role of social factors in the behavior of individuals and of groups, including such topics as attitudes, prejudice, leadership and personality and culture. *Three semester hours.*

Mr. Laird; Mr. Terhune.

172a. PSYCHOLOGY OF PERSONALITY.

Consideration of various theoretical approaches, including psychoanalytic, behaviorist and self theories, and of research work in areas such as anxiety, stress, unconscious processes, emotion, and motivation. *Three semester hours.* Mr. Vonèche.

201a. LABORATORY IN SOCIAL PSYCHOLOGY.

Investigation of such phenomena as small group interaction, interpersonal perception, and attitude measurement and change. Prescribed experiments will be conducted on a series of problems. Prerequisite: Psychology 160b or 260a. *Four semester hours.*

Mr. Terhune.

202a. PSYCHOLOGY OF THINKING.

Not offered, 1968-69.

Types of thought processes and methods of investigating them, with emphasis on concept formation, imagination, creative thought, reasoning and problem solving. *Three semester hours.*

203b. LABORATORY IN PERCEPTION.

The Laboratory Course in Perception will include investigation of sensory and perceptual phenomena in a variety of sense modalities. Theoretical and methodological issues will be considered in the context of specific experimentation. Prerequisite: Psychology 160b or 260a. *Four semester hours.*

Mr. Vonèche.

204a. LABORATORY IN LEARNING.

Methods and findings in the study of learning, emphasizing their relation to theoretical issues. Prerequisite: Psychology 160b or 260a. *Four semester hours.*

Mr. Stevens.

205a. LABORATORY IN THINKING.

Investigation of selected problems in such areas as association, set, concept attainment, verbal behavior, and problem solving. Consideration of methodological and theoretical issues in the context of prescribed and original studies. Prerequisite: Psychology 160b, or 260a. *Four semester hours.*

Mr. Cirillo.

206a. LABORATORY IN PERSONALITY.

Investigation of problems in such areas as perceptual defense, motives and performance, self perception, experimenter influence and emotions. Both prescribed and an original experiment are performed. Prerequisite: Psychology 160 and 172, or their equivalents. *Four semester hours.*

Mr. Laird.

207a, b. BEHAVIORAL SCIENCE AND THE ENVIRONMENT.

Human and animal social behavior related to aspects of the physical environment. Social interaction, territory, density, movement and migration. Introduction to environment design; problem formulation, design processes, simulation. Offered jointly with School of Geography. Prerequisite: permission of instructor. *Three semester hours each semester.*

Mr. Stea.

209a. DEVELOPMENTAL APPROACHES TO BEHAVIOR.

A critical examination of presuppositions, methods, concepts and empirical inquiries of those concerned with the development of behavioral systems. Implications of developmental conceptualization for all of the life sciences will be discussed. Psychological theories of Freud, Piaget and Werner will be given special emphasis. *Four semester hours.*

Mr. Kaplan.

210b. LABORATORY IN DEVELOPMENTAL PSYCHOLOGY.

The Laboratory Course in Developmental Psychology will be aimed at giving students direct experience with the phenomena described by Heinz Werner and Jean Piaget. The course will exemplify concepts such as syncretism in different populations (young children, schizophrenics, mentally retarded, etc.) and at different developmental levels, for instance, at the level of action or of thought. (Students analyze cognitive processes, and conduct an experiment.) Prerequisite: Psychology 160b or 260a and 209a. *Four semester hours.*

Mr. Bibace.

211a. DEVELOPMENTAL APPROACHES TO LEARNING.

Not offered, 1968-69.

Applications of developmental psychology to slow learners in the classroom. Particular attention is paid to the work of Kephart, Rabinovitch and Cruickshank. Practicum work with children is required. Prerequisite: Psychology 160b, 209a. *Three semester hours.*

Mr. Bibace.

220a. MATHEMATICAL APPROACHES TO PSYCHOLOGY.

Not offered, 1968-69.

Intensive analysis of several mathematical models used in psychology. Offered in alternate years. Prerequisite: Mathematics 12 or consent of the instructor. *Three semester hours.*

222a. PHYSIOLOGICAL PSYCHOLOGY: INTRODUCTORY.

A survey of current problems and theory in physiological psychology. Emphasis will be placed upon the physiological bases of motivation, emotion, learning, perception and memory. Theoretical models of CNS activity will also be discussed. *Three semester hours.*

Mr. Stein.

223b. LABORATORY IN PHYSIOLOGICAL PSYCHOLOGY.

Introduction to methods and techniques used to study the physiological bases of behavior. The student participates in carrying out brain lesions, chemical and electrical stimulation of the brain, anatomy and neurohistological examination. Individual and group research projects is required. Students participate in debates of interest to the group. Prerequisites: Psychology 222a, and 160b or 260a, consent of the instructor. *Four semester hours.*

Mr. Stein.

224b. HUMAN BEHAVIOR AND NERVOUS SYSTEM FUNCTIONING.

Biological-behavioral relationships in terms of individual differences are discussed. Among the topics covered are: electrophysiological studies of autonomic functioning of stress; EEG; brain localization of behavioral functions in humans by means of electrical stimulation and studies of brain damage; selected problems in psychopharmacology. Equal emphasis is placed upon investigations of normal and abnormal processes. *Three semester hours.*

Mr. Vogel.

225a. SEMINAR IN REHABILITATION PSYCHOLOGY.

Psychological problems in everyday life situations, such as problems of physically disabled, mentally retarded, the aged, the poor, etc., will serve as topics. The primary focus is on interpersonal relationships and value problems. *Three semester hours.* Miss Dembo.

226b. SEMINAR IN INDIVIDUAL DIFFERENCES.

An examination of the evidence for and explanation of individual differences in both cognitive functioning and personality. Particular attention is given to the influence of socio-cultural factors. *Three semester hours.*

Mrs. Uzgriris.

227a. BIOLOGICAL CORRELATES OF BEHAVIOR.

Special emphasis on sex differences. *Three semester hours.*

Mr. Broverman.

- 231b. SEMINAR IN THE HISTORY OF PSYCHOLOGY. Not offered, 1968-69.
Historical development of theories and methods in psychology. Prerequisite: consent of the instructor. *Three semester hours.* Mr. Kaplan.
- 232b. SEMINAR IN MODERN PSYCHOLOGICAL THEORIES. Not offered, 1968-69.
Comparisons and evaluations of various modern theories in psychology. Prerequisite: consent of the instructor. *Three semester hours.*
- 236b. LABORATORY IN CHILD PSYCHOLOGY. Not offered, 1968-69.
Survey of research methods used in the study of children, with particular emphasis on observational techniques. Lecture: 2 hours; Laboratory: 3 hours. Prerequisite: Psychology 160b, 260a, 150a or 150b. *Four semester hours.* Mr. Wohlwill.
- 237b. INTERPERSONAL PERCEPTION. Not offered, 1968-69.
A detailed examination of various theoretical approaches to phenomena of interpersonal perception. Included will be the predictions of role theory, balance and consistency theories, and various personality theories. The empirical evidence relative to these predictions will be discussed; particular attention will be given observations that are not readily interpretable by social psychological theories. *Four semester hours.*
- 260a. INTRODUCTION TO QUANTITATIVE METHODS IN PSYCHOLOGY.
Introduction to basic techniques of descriptive and inferential statistics. Primarily for juniors. Prerequisite for all laboratory courses for those who have not taken Psychology 160b. *Three semester hours.* Mr. Rankin.
296. DIRECTED RESEARCH IN PSYCHOLOGY.
Independent research for qualified students not in the honors program. (Open to seniors and, in exceptional circumstances, to juniors with the approval of the staff member who will direct their study.) *Three semester hours each semester.* Staff.
297. DIRECTED READINGS IN PSYCHOLOGY.
Independent study for qualified students not in the honors program. (Open to seniors and, in exceptional circumstances, to juniors with the approval of the staff member who will direct their study.) *Three semester hours each semester.* Staff.
298. HONORS IN PSYCHOLOGY: Junior year.
During the Fall semester, junior honors students will meet in weekly seminars conducted by members of the staff to familiarize themselves with the major fields within the discipline of psychology, to plan their survey of the literature in an area of interest to them, and to discuss their readings. During the Spring semester, students will carry out independent intensive readings on a particular problem of interest to them, in individual consultation with a member of the staff. *Three semester hours each semester.* Messrs. Stea and Stein.
299. HONORS IN PSYCHOLOGY: Senior year.
Students will carry out a research project under the direction of a member of the staff. *Four semester hours each semester.* Staff.
- 301a. EXPERIMENTAL METHOD IN PSYCHOLOGY.
General problems of experimental method will be considered in the context of original research projects conducted by the students. Mr. Wapner.

301b. EXPERIMENTAL APPROACHES TO PERCEPTION. Not offered, 1968-69.
Examination of a variety of experimental-theoretical approaches to the study of perception.
Mr. Wapner.

302. STATISTICAL METHODS.
Descriptive statistics, statistical inference and experimental design in psychology.
Mr. Rankin.

303b. MOTIVATION AND RELATED TOPICS.
Contemporary issues arising from both animal and human research. Complex human motives, drives, emotions and instincts are discussed.
Messrs. Laird and Stevens.

304a. PHYSIOLOGICAL ASPECTS OF BEHAVIOR, I. Not offered, 1968-69.
Neuro-anatomy as related to behavior. Offered in alternate years.

305b. PSYCHOPHYSIOLOGY OF SENSORY PROCESSES. Not offered, 1968-69.

306b. PSYCHOBIOLOGICAL FOUNDATIONS OF BEHAVIOR. Not offered, 1968-69.

307a. PHYSIOLOGICAL PSYCHOLOGY: ADVANCED.
A survey of current problems, theories and controversies in physiological psychology. Course orientation will be similar to the introductory course with more attention to critical experiments and controversies. Also considered will be the neuroanatomy and neurophysiology of important CNS structures. Prerequisites: Knowledge of experimental method in psychology; previous experience in either perception, learning or comparative.
Mr. Stein.

307b. PSYCHO-BIOLOGY SEMINAR: SELECTED PROBLEMS IN ORGANISMIC PSYCHOLOGY AND NEUROBIOLOGY.

Critical evaluation by participants of important issues dealing with the neural bases of behavior. Students present material in their area of interest in group discussions and analysis. Where possible, guest lecturers present their research and ideas.

Messrs. Stein and Brink (Biology Department).

309. APPRENTICESHIP IN REHABILITATION: INTRODUCTORY, I. Miss Dembo.

310. APPRENTICESHIP IN REHABILITATION: INTRODUCTORY, II. Miss Dembo.

311a. CLINICAL METHODS, I.
Theory, administration, scoring and interpretation of clinical-psychological tests, objective and projective, with special emphasis on analysis of cognitive functioning of adults.

To be announced.

311b. CLINICAL METHODS, I.
Theory, administration, scoring and interpretation of clinical-psychological tests, objective and projective, with special emphasis on analysis of the cognitive functioning of children.
To be announced.

312a. THEORIES OF DEVIANT BEHAVIOR.
Deviant behavior as viewed by various theories. Clinical and experimental evidence is examined.
Mr. Bibace.

313b. PRINCIPLES AND CONCEPTS UNDERLYING PSYCHOLOGICAL TESTS.
Theory and problems of psychological measurement with special reference to psychological tests.
Mr. Laird.

315a. ADVANCED CHILD PSYCHOLOGY: GENERAL-EXPERIMENTAL.

The experimental study of basic processes of child behavior (perception, learning, thinking, etc.) and of major dimensions of developmental change. Mr. Vonèche.

315b. ADVANCED CHILD PSYCHOLOGY: PERSONALITY-SOCIAL.

Not offered, 1968-69.

Study of the child's personality and social development with particular attention to research concerning itself with antecedent-consequent relationships. Mrs. Uzgiris.

316a. RESEARCH METHODS IN THE STUDY OF CHILDREN.

Not offered, 1968-69.

Survey of methods used in the study of children, with emphasis on the measurement of personality characteristics and on observational techniques. Offered in alternate years.

Mrs. Uzgiris.

316b. METHODOLOGICAL PROBLEMS IN DEVELOPMENTAL PSYCHOLOGY.

Questions of scientific method, research strategy, quantitative analysis, etc., arising in developmental research, with particular reference to the study of developmental change in behavior. Offered in alternate years. Mrs. Uzgiris.

317a. BEHAVIOR IN INFANCY.

Offered in alternate years.

Mrs. Uzgiris.

318. SEMINAR IN PSYCHOLOGY OF INTERPERSONAL RELATIONSHIPS AND REHABILITATION.

Value problems pertinent to interpersonal relations will be discussed, including value possessions, value losses, regaining of values and adjustment to value losses. Offered in alternate years. Miss Dembo.

319 SEMINAR IN TOPOLOGICAL PSYCHOLOGY AND REHABILITATION.

Not offered, 1968-69.

Offered in alternate years.

Miss Dembo.

320a. ADVANCED SEMINAR ON ORGANISMIC-DEVELOPMENTAL APPROACHES TO BEHAVIOR.

Basic categories of the organismic-developmental approach to life sciences, with examination of the application of these categories to a wide range of problem areas in psychology. Mr. Kaplan.

321. HIGHER MENTAL PROCESSES.

Not offered, 1968-69.

Theory and experimental research pertaining to such functions as remembering, classifying, problem-solving, reasoning, concept-forming, symbolization, etc. Mr. Kaplan.

322a. PSYCHOLOGY OF LEARNING.

Theoretical viewpoints and experiments in the field of learning.

Mr. Stevens.

323b. SEMINAR IN LEARNING.

Contemporary problems in learning.

Mr. Stevens.

324a. THEORIES OF PERSONALITY.

Comparison of various theoretical approaches to the study of personality.

Mr. Wiener.

325a. ADVANCED SOCIAL PSYCHOLOGY.

Intensive analysis of various theoretical systems in social psychology.

Mr. Terhune.

327b. THE BIOLOGICAL ASPECTS OF HUMAN DEVELOPMENT.

Not offered, 1968-69.

Mr. Klaiber.

328b. COMPARATIVE ANIMAL BEHAVIOR. Not offered, 1968-69.
Theories and research in ethology and comparative psychology, including problems of causation, development and evolution, will be discussed. Mr. Stevens.

329a. PSYCHOANALYTIC EGO PSYCHOLOGY. Not offered, 1968-69.
After a systematic review of Freud's major assumptions, propositions, and concepts, emphasis is given to select psychoanalytic writings since 1940 concerned with meta-psychology, concepts of ego and adaptation, and psychoanalysis as a developmental psychology.

331. CLINICAL METHODS, II.
Application of various clinical methods in the assessment of personality. Mr. Goodglass and Clinical Staff.

332b. THEORIES OF PSYCHOTHERAPY.
Comparison of various theoretical approaches to psychotherapy. Mr. Wiener.

333b. LEARNING APPROACHES TO PSYCHOTHERAPY. Not offered, 1968-69.
A critical survey of the applications of contemporary learning theory principles and empirical findings to the modification of deviant behavior. Selected problems pertaining to individual treatment and token-economies.

337b. SEMINAR ON PROBLEMS IN CHILD AND DEVELOPMENTAL PSYCHOLOGY. Mr. Vonèche.

343b. PERSON PERCEPTION.
Examination of the process by which impressions of others are formed. Emphasis will be placed on the experimental methods used to investigate problems in this area. Mr. Rankin.

344b. DEVELOPMENTAL APPROACHES TO COGNITION.
Developmental approaches to motor, perceptual and conceptual learning in normal and pathological groups through clinical and experimental methods.

Messrs. Bibace and Wapner.
345a. DEVELOPMENTAL PSYCHOLOGY AND PSYCHOPATHOLOGY. Not offered, 1968-69.
Theoretical, clinical and experimental aspects of psychopathology from a developmental point of view. Messrs. Bibace, Kaplan, Wapner.

346b. DEVELOPMENTAL PSYCHOLOGY AND PSYCHOANALYSIS. Not offered, 1968-69.
Offered in alternate years. Mr. Bibace.

347b. DEVELOPMENTAL APPROACHES TO COGNITIVE ASSESSMENT AND BEHAVIOR CHANGE. Not offered, 1968-69.

Clinical applications of Werner's comparative-developmental approach to cognitive assessment and behavior change. The contributions of Kephart, Rabinovitch, Rey, Zazzo, and others are covered. A clinical or experimental study is required. Mr. Bibace.

348. BEHAVIORAL VARIATIONS IN SOCIAL SETTINGS AND PROBLEMS OF ADJUSTMENT.
The development and maintenance of behavior patterns in social institutions and explorations of the ways individual-institution non-congruence may be resolved through modification of institution, child, or both. Practicum experience in the course includes work in community settings (e.g., schools, recreation centers, hospitals). Mr. Laird.

349. APPRENTICESHIP IN REHABILITATION: ADVANCED, I. Miss Dembo.

350. APPRENTICESHIP IN REHABILITATION: ADVANCED, II. Miss Dembo.
351. CLINICAL METHODS, III.
Integration of various methods in assessment of personality and behavior. Clinical Staff.
352. CLINICAL METHODS, IV.
Application of theoretical principles to psychotherapy.
Miss Deweese, Mr. Sills and Clinical Staff.
- 356a. PSYCHOPATHOLOGY OF CHILDHOOD. Not offered, 1968-69.
Offered in alternate years.
- 357b. SYMBOLIC BEHAVIOR: PROBLEM OF THE METAPHOR.
A discussion of normal and pathological representation in dreams, art, poetry, thinking,
etc. Messrs. Cirillo and Kaplan.
- 360b. ADVANCED SEMINAR IN SOCIAL PSYCHOLOGY. Mr. Terhune.
- 364b. SELECTED PROBLEMS IN PSYCHOPHARMACOLOGY. Not offered, 1968-69.
Mr. Krus and Visiting Staff.
380. RESEARCH IN PSYCHOLOGY.
Direction of individual students in their research. Staff.
381. READINGS IN PSYCHOLOGY.
Critical analysis of literature in areas related to individual research. Staff.
385. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER.
Introduction and individual intelligence testing. Mr. Bibace and Clinical Staff.
386. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, II.
Personality evaluation by tests. Mr. Bibace and Clinical Staff.
387. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, III.
Psychotherapy and consulting. Mr. Bibace and Clinical Staff.
388. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, IV.
Personality evaluation by interview; psychotherapy. Mr. Bibace and Clinical Staff.
389. INTERNSHIP. Staff.
- DEPARTMENTAL COLLOQUIUM Visiting Lecturers.
- WORKSHOPS
Conducted annually in such areas as comparative-animal psychology, scaling theory, factor analysis, rehabilitation, cultural anthropology, ethnolinguistics, pathology of language.
Visiting Lecturers.

Romance Languages

DEPARTMENT FACULTY

J. Richard Reid, Ph.D., *Professor of Romance Languages, Department Chairman*

Raymond E. Barbera, Ph.D., *Associate Professor of Romance Languages*

J. Fannin King, M.A., *Associate Professor of Romance Languages*

Theodore Nicol, Ph.D., *Associate Professor of Romance Languages*

William S. Shiver, Ph.D., *Associate Professor of Romance Languages*

Clodius Willis, M.A., *Assistant Professor of Romance Languages*

Nancy M. Baum, M.A.Ed., *Instructor in Romance Languages*

UNDERGRADUATE PROGRAM

The department offers courses in the languages and literatures of France, Spain and Spanish America. These courses fall into two groups: lower level (French and Spanish 11 and 12), and upper level (all other courses). French 113 (French civilization) constitutes a separate category.

In the lower level the primary aim is the mastery of the skills of communication in a language, with a view to its effective use for a variety of possible ends. These skills include reading, writing, speaking and understanding as well as what may be called basic literacy in the language.

In the upper level, the primary aim is an acquaintance in depth with a foreign civilization, principally through a study of its literature but with attention also to other aspects of its culture and to the further perfection of linguistic competence. The courses in literature are complemented by others in civilization and in advanced composition, conversation and phonetics. All upper level courses are conducted in the language.

A major in Romance languages must comprise:

1. Twenty-four semester hours to be chosen from French 137, 141, 147a, 151a, 152a, 153b, 154b and 250; Spanish 137, 141, 142a, 143a, 144b, 145b and 250.
2. French 113 or the equivalent.
3. History 10, or the equivalent, normally to be completed by the end of the sophomore year.
4. At least 6 semester hours, to be approved by the department, in non-Romance literature.

The Romance language major program may be in either French or Spanish exclusively, or include both languages in any proportion to suit the needs and desires of the individual. Major students are urged, however, to acquire a basic competence in both languages even though specializing in only one.

In addition, at least 36 semester hours of a major's program must be selected from other than Group C and Group D courses (See Page 26 concerning "Groups").

Students intending to major in Romance languages should consult the department chairman. An honors program in Romance languages is available to qualified upperclassmen.

LANGUAGE LABORATORY

A modern electronic language laboratory is available for class instruction, and independent study. Use of the laboratory is required of students in the lower level and "137" courses in French and Spanish, and available to others.

DEPARTMENTAL INTERNSHIP PROGRAM

The department cooperates with the Department of Education in a graduate program of preparation of teachers of Romance languages, leading to the degree of Master of Arts in Education. Participants carry appointment as Teaching Assistant Scholars and as Departmental Interns in Romance Languages. Normally requiring two years, the program consists of half-time study in education and Romance languages and literatures, and half-time devoted to supervised teaching and other assistance to the Department of Romance Languages.

COURSES IN FRENCH

F11. ELEMENTARY.

For beginners or others not yet qualified to enter the intermediate course. Grounding in all four language skills (hearing, speaking, reading, writing) as preparation for subsequent courses conducted in the language. Meets each week: twice in General Session, twice in small Drill Sessions, three half-hour periods of individual work in the language laboratory. Indivisible course. *Three semester hours each semester.* Staff.

F12. INTERMEDIATE.

Review of the elements and further development of communication skills aimed at a basic literacy. Conducted in French. Meets each week: twice in General Session, twice in small Drill Sessions, three half-hour periods of individual work in the laboratory. Prerequisite: French 11 or equivalent skill in the language, to be determined by a placement test. *Three semester hours each semester.* Staff.

113. INTRODUCTION TO FRENCH CIVILIZATION.

A selective survey of the history, art, literature and music of France, from the Middle Ages to modern times. An elementary knowledge of French is desirable but not required. Admission subject to consent of instructor. Offered in alternate years. *Three semester hours each semester.* Mr. Nicol.

F131. READINGS IN FRENCH LITERATURE.

Third-year level. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of reading in French. The emphasis in the second semester is on an understanding of novels and plays selected for their literary excellence and broad appeal. Conducted in French. Prerequisite: French 12 or equivalent skill in the language, to be determined by a placement test. *Three semester hours each semester.* Staff.

132a. FRENCH EXISTENTIALIST AUTHORS OF THE TWENTIETH CENTURY.

Third-year level. Conducted in French. Prerequisite: First semester of French 131, or grade of B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Conducted in French. Admission subject to consent of instructor. *Three semester hours.* Mr. Nicol.

133b. THE PHILOSOPHY AND LITERATURE OF THE ABSURD.

Third-year level. A reading of representative works of Camus, the apologist of the absurd, and also selected works of Beckett and Ionesco. Conducted in French. Prerequisite: First semester of French 131, or grade of B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. *Three semester hours.* Mr. Nicol.

134a. LITERARY PORTRAYALS OF THE OUTSIDER AND THE REBEL.

Third-year level. Studies in the problem of conscience and human values in the life of the outsider and the rebel as portrayed in selected works of recent French writers. Conducted in French. Prerequisite: First semester of French 131 or B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. *Three semester hours.* Mr. Shiver.

F134b. IDEAS OF UTOPIA IN FRENCH LITERATURE.

Third-year level. Selected readings and discussion. A study of both theoretical and imaginative writing concerning the question of the perfectibility of human life. Intended especially for students majoring in fields other than language and literature. Conducted in French. Prerequisite: First semester of French 131, or grade of B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. *Three semester hours.* Mr. Shiver.

137. ORAL AND WRITTEN FRENCH.

The aim of this third-year course is to perfect skills in communication both oral and written. In the first semester, particular attention is given to the sounds of French and to its rhythm and melodic patterns. In the second semester, increasing attention is given to grammatical patterns and written French and to fluency in the spoken language. Conducted in French. Two regular class periods, one two-hour session and three half-hour periods in the laboratory per week. Prerequisite: Grade of B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. *Three semester hours each semester.* Mr. King.

141. GENERAL VIEW OF FRENCH LITERATURE.

An interpretation of the main currents of French literature. Each period is studied by concentrating attention on a limited number of works and authors best bringing to focus the characteristics of the period. Conducted in French. Prerequisite: Grade of B— or higher in a third-year course. *Three semester hours each semester.* Mr. King.

147b. ADVANCED COMPOSITION AND STYLISTICS.

Introduction to the problems of stylistics with a study of selected grammatical topics. Conducted in French. Prerequisite: Grade of B— or higher in French 137, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Nicol.

151a. THE MIDDLE AGES AND THE RENAISSANCE.†

Not offered, 1968-69.

Emphasis is upon developing an understanding of the philosophical, religious and social attitudes of the Middle Ages and the Renaissance, with due attention to the facts of literary history. Conducted in French. Prerequisite: Grade of B— or higher in French 141, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. King.

152a. CLASSICISM.†

A study of outstanding literary works, drawn principally but not exclusively from the age of Louis XIV, to illustrate the esthetic and intellectual nature of the classical point of view as it persists in the French thought of various periods. Conducted in French. Prerequisite: Grade of B— or higher in French 141, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Nicol.

†For French 151a, 152a, 153b and 154b a certain historical and analytical perspective such as is provided by French 141 is presupposed. These courses are planned so that they need not be taken in chronological order but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.

153b. ROMANTICISM AND REALISM.†

A study of outstanding literary works, drawn principally but not exclusively from the late 18th and 19th centuries, to illustrate the esthetic and intellectual climates and the literary techniques generally described as romantic or realistic. Conducted in French. Prerequisite: Grade of B- or higher in French 141, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Nicol.

154b. THE MODERN PERIOD.†

Not offered, 1968-69.

A study of a few outstanding dramatists, novelists and poets to illustrate the diverse literary attitudes characteristic of 20th century French literature. Conducted in French. Prerequisite: Grade of B- or higher in French 141, or the equivalent. Offered in alternate years. *Three semester hours.* Mr. Nicol.

FRENCH 250. SPECIAL TOPICS IN FRENCH.

Staff.

ROMANCE LANGUAGES 270. (EDUCATION 270) THE TEACHING OF ROMANCE LANGUAGES.

For complete description, see Education 270. *Three semester hours each semester.*

Mr. Reid and Staff.

ROMANCE LANGUAGES 271. (EDUCATION 271) THE TEACHING OF ROMANCE LANGUAGES.

Advanced. (See Education 271). *Three semester hours each semester.*

Mr. Reid and Staff.

COURSES IN SPANISH

F11. ELEMENTARY.

For beginners or others not yet qualified to enter the intermediate course. Grounding in all four language skills (hearing, speaking, reading, writing) as preparation for subsequent courses conducted in the language. Meets each week: twice in General Session, twice in small Drill Sessions, three half-hour periods of individual work in the language laboratory. Indivisible course. *Three semester hours each semester.* Staff.

F12. INTERMEDIATE.

Review of the elements and further development of communication skills aimed at a basic literacy. Conducted in Spanish. Meets each week: twice in General Session, twice in small Drill Sessions, and three half-hour periods of individual work in the laboratory. Prerequisite: Spanish 11 or equivalent skill in the language, to be determined by a placement test. *Three semester hours each semester.* Staff.

F131. READINGS IN SPANISH AND SPANISH-AMERICAN LITERATURE.

Third-year level. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of reading in Spanish; in the second semester, on the understanding of works of high literary quality and broad appeal. Readings from Spain and one American nation, selected with a view to developing insight into the respective cultures. Conducted in Spanish. Prerequisite: Spanish 12 or equivalent skill in the language, to be determined by a placement test. *Three semester hours each semester.* Mr. Reid.

F131.1b. MEXICAN THEMES.

Independent study of literature dealing with some theme of Mexican culture, of the

†For French 151a, 152a, 153b and 154b a certain historical and analytical perspective such as is provided by French 141 is presupposed. These courses are planned so that they need not be taken in chronological order but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.

student's choosing. Written report. Limited to students who are currently enrolled in, or who have previously completed, Spanish 131. *One semester hour.* Mr. Reid.

137. ORAL AND WRITTEN SPANISH.

Third-year level. A rapid, intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted in Spanish. Two regular class periods, one two-hour session, and one to two hours in the laboratory per week. Prerequisite: Grade of B— or higher in Spanish 12 or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. Offered in alternate years. *Three semester hours each semester.*

Mr. Barbera.

141. THE LITERATURE OF SPAIN.

Not offered, 1968-69.

A general view of Spanish literature with emphasis on the origins and development of the novel and drama, culminating in the masterworks of the nineteenth century. Attention is given to political and cultural background. Conducted in Spanish. Prerequisite: Grade of B— or higher in a third-year course. Offered in alternate years. *Three semester hours each semester.*

Mr. Barbera.

142a. EARLY SPANISH LITERATURE FROM THE *Poema de Mio Cid* TO THE *Celestina*.

This course will emphasize the nature of epic poetry, the first manifestation of "realism" in the literature of the Middle Ages, and will culminate in the hybrid masterpiece, the *Celestina*, a combination of novel and drama, unique in the history of European literature. Conducted in Spanish. Prerequisite: Grade of B— or higher in a third-year course. Offered in alternate years. *Three semester hours.*

Mr. Barbera.

143a. CERVANTES.

Not offered, 1968-69.

This course will concentrate upon *Don Quixote* with excursions into other writings of Cervantes illustrating the changes in his literary development. Cervantes' debt to previous literary works will be studied. Conducted in Spanish. Prerequisite: Grade of B— or higher in a third-year course. Offered in alternate years. *Three semester hours.*

Mr. Barbera.

144b. THE DRAMA OF THE SIGLO DE ORO.

Besides studying the major figures such as Lope de Vega, Tirso de Molina, Alarcón and Calderón de la Barca, there will be some study of the origins of the drama in Spain. Conducted in Spanish. Prerequisite: Grade of B— or higher in a third-year course. Offered in alternate years. *Three semester hours.*

Mr. Barbera.

145b. THE MODERN NOVEL.

Not offered, 1968-69.

A number of 19th century novels will be read. The 20th century will be represented by such outstanding novelists as Galdós (who bridges the 19th and 20th centuries), Unamuno, Valle-Inclán and Baroja. Conducted in Spanish. Prerequisite: Grade of B— or higher in Spanish 131 or 137, or the equivalent. Offered in alternate years. *Three semester hours.*

Mr. Barbera.

SPANISH 250. SPECIAL TOPICS IN SPANISH.

Staff.

ROMANCE LANGUAGES 270. (EDUCATION 270) THE TEACHING OF ROMANCE LANGUAGES.

For complete description, see Education 270.

Mr. Reid and Staff.

ROMANCE LANGUAGES 271. (EDUCATION 271) THE TEACHING OF ROMANCE LANGUAGES.

Advanced. (See Education 271).

Mr. Reid and Staff.

Russian

DEPARTMENT FACULTY

Larisa Sorokin, M.A., *Assistant Professor of Russian*

UNDERGRADUATE PROGRAM

Courses are offered in Russian language and literature to provide a competent reading and speaking knowledge of the language essential for carrying on advanced study in many fields, to fulfill the elective requirement for the degree of Bachelor of Arts and to provide an introduction to Russian civilization.

COURSES

F11. INTRODUCTORY RUSSIAN.

An introduction to the written and spoken language. Four class periods and three laboratory sessions per week. Indivisible course. *Four semester hours each semester.*

Mrs. Sorokin.

F12. INTERMEDIATE RUSSIAN.

Advanced Russian grammar. Continued emphasis upon reading and conversation. Three class periods, one supervised drill session, and three laboratory sessions per week. Open to qualified freshmen. *Three semester hours each semester.*

Mrs. Sorokin.

13. ADVANCED RUSSIAN.

Intensive reading of contemporary and literary sources. Advanced composition and conversation. *Three semester hours each semester.*

Mrs. Sorokin.

130. LITERARY ANALYSIS OF SELECTED WORKS OF RUSSIAN LITERATURE.

In Russian. Prerequisite: Russian 13 or equivalent with permission of the instructor. *Three semester hours each semester.*

Mrs. Sorokin.

179. SURVEY OF RUSSIAN LITERATURE.

Not offered, 1968-69.

Course provides a complete survey of Russian literature from its inception in the 11th century to the Revolution of 1917. Major trends in the development of the medieval literary tradition will be illustrated, leading into the "Golden Age" of Russian letters in the 19th century. Concentrated attention will be given to the evolution of the realistic tradition in Russia, culminating in the works of Tolstoy, Dostoyevsky, Chekhov and Gorky. Twentieth century literary movements of Symbolism, Acmeism and Futurism will be discussed leading into the material treated in the course on Soviet Literature 180. Given in English. *Three semester hours each semester.*

Mrs. Sorokin.

180. SOVIET LITERATURE.

Offered in Clark Evening College.

In translation. Poems, plays, and novels of selected Soviet authors considered as works of literary art and as illustrations of the social, economic, and political conditions of the period. *Three semester hours each semester.*

Mrs. Sorokin.

181b. DIRECTED READINGS IN RUSSIAN LITERATURE.

Not offered, 1968-69.

Conducted in English. Study of selected masterpieces of Russian literature of the 19th century. Prerequisite: Russian 179 or consent of the instructor. *Three semester hours.*

Mrs. Sorokin.

191. SEMINAR IN SOVIET LITERATURE.

Not offered, 1968-69.

Major works which contribute to an understanding of Soviet literary, cultural and intellectual trends will be read and discussed. Prerequisite: consent of the instructor. *Three semester hours each semester.*

Mrs. Sorokin.

COOPERATIVE PROGRAMS

The College of the Holy Cross offers the following courses available to Clark students:

1717101. GOLDEN AGE OF RUSSIAN LITERATURE.

Conducted in English. Study of the Russian Novel including works of Lermontov, Gogol, Turgenev, Tolstoy, Dostoevsky and Chekhov. *Three semester hours each semester.*

Mr. Anderson.

1717501. DECADENT LITERATURE IN 19 C RUSSIA.

Conducted in English. The decline of the Russian Novel after the Golden Age. Studied are works of Bunin, Gorky, Bely, Andreyev e.a. Fall 1968 only. *Three semester hours.*

Mr. Sorokin.

Sociology

DEPARTMENT FACULTY

Philip G. Olson, Ph.D., *Associate Professor of Sociology, Department Chairman*

Frederick W. Killian, LL.B., *Associate Professor of Sociology*

Willard D. Callender, Jr., Ph.D., *Assistant Professor of Sociology*

Stanford N. Gerber, Ph.D., *Assistant Professor of Sociology*

Maurice R. Stein, Ph.D., *Professor (Affiliate) of Sociology*

UNDERGRADUATE PROGRAM

An undergraduate major in sociology is designed to provide the student with an understanding of the intellectual tradition which has focused on description and explanation of human society, its structure, organization, and process. Emphasis is on both theoretical aspects of society in general and specifically the nature of American society. Requirements for a major in sociology consist of 24 semester hours in sociology, of which six must be from 100 level courses and six from an advanced theory course (Sociology 290 or its equivalent). In addition, 18 semester hours must be in related fields, which include all courses in economics, government, history, international relations, linguistics, philosophy, psychology; educational psychology; educational sociology; and cultural geography. All students are encouraged to take 100 level courses during their freshman and sophomore years, since enrollment in each course is limited to 50 students and preference is given to freshmen and sophomores. Six semester hours of 100 level courses is the prerequisite for all 200 level courses.

In addition, at least 36 semester hours of a major's program must be selected from other than the related fields listed above.

An honors program of independent study and research is available to qualified upper-classmen. Ordinarily a candidate will begin honors work in the second semester of the junior year by enrolling in Sociology 28.

A program of field research and advanced study for undergraduates is available to qualified seniors through a National Science Foundation grant. Qualified seniors spend the year in graduate level courses, graduate colloquia, take Sociology 297, 21a, and either 255a, 26b, or 291a, and spend the following summer in a full-time research project.

GRADUATE PROGRAM

Graduate study leading to the Master of Arts degree is offered. The program emphasizes theory and research methods and the following substantive areas: Law and society, community and urban society. Field research as part of the thesis preparation is normally done through the recently created Center for Community Studies, a research center drawing on the professional talents of social scientists in the Worcester area colleges and universities and oriented toward urban research.

All graduate students are required to have teaching experience as part of their M.A. program. This may be accomplished by assisting in one or more of the 100 level courses.

In addition to the courses listed below, a number of junior-senior level courses in sociology are being offered at Assumption College and the College of the Holy Cross. These courses are open only to junior and senior sociology majors. A detailed statement of the course descriptions and procedures for registering can be obtained from the Sociology Department at Clark. Enrollment in these courses is limited and students who are interested are urged to enroll for them early.

A listing of available courses for 1968-69 at Assumption and Holy Cross is included below.

COURSES

F110a. SOCIOLOGICAL INQUIRY.

A theoretical background to the discipline of sociology. Emphasis is placed upon the philosophical and historical underpinnings of sociological work. Basic writings by classical and modern sociologists such as Durkheim, Weber, Marx, Merton, and Goffman are examined and discussed. Attention also is given to basic research techniques. Open to freshmen and sophomores only. *Three semester hours.* Mr. Olson.

F11b. PERSPECTIVES ON MODERN AMERICAN SOCIETY.

An analysis of major features of modern society including violence, urban conflict, and changing values within the context of larger structural changes in society. The analysis is from the perspective of alternative sociological theories of society. *Three semester hours.*

Mr. Olson.

F12a. SOCIAL ANTHROPOLOGY.

An analysis of primitive society with emphasis on social structure, including religion, kinship and economics. The relation between culture and personality and the processes of social change in the primitive world are explored. *Three semester hours.* Mr. Blaut.

F13b. CULTURE AND PERSONALITY.

An examination of the social contexts out of which personality types emerge; the development of the social mind and self; theories of interpersonal behavior and the presentation of self; the relation between individual behavior and social structures. An analysis of the role of history, society, and psychological factors in the development of personal identity. *Three semester hours.*

Mr. Gerber.

F14a. SOCIAL ORGANIZATION.

Social structure of major social systems: government, business, education, religion. Also selected special systems: science, welfare, leisure. Emphasis on roles of bureaucracy, informal groups, social movements and publics in these systems. *Three semester hours.*

Mr. Callender.

F17a. AMERICAN MINORITY GROUPS.

Analysis of the major racial, ethnic and religious minorities in the U.S.A. Their structures, conflicts and changing relations with the dominant American culture. Social effects of alternative policies and strategies in contemporary minority group relations. *Three semester hours.* Mr. Gerber.

F18b. DEVIANT BEHAVIOR.

The origins and sources of socially disapproved behavior in human groups, particularly societies. Study of the major types of deviant behavior in the United States and the processes by which they are defined, generated, and controlled. *Three semester hours.*

Mr. Callender.

21a. SOCIOLOGICAL ANALYSIS.

The philosophical and logical premises underlying the collection and interpretation of empirical sociological data. The methods of science—problem formation, hypothesis construction, research design and analysis—are developed for undertaking research. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.*

Mr. Olson.

22b. THE ANTHROPOLOGICAL STUDY OF ETHNIC COMMUNITIES.

A seminar on field work methods. The role of the participant-observer. Recording cohesion and disintegration. Students obtain supervised field experience. *Three semester hours.*

Mr. Gerber.

24b. THE COMMUNITY.

Not offered, 1968-69.

An analysis of community studies as the basis for understanding society, with particular reference to American society. The rise of central institutions and the transformation of community in twentieth century America: the links between community social structure and the total society. The historical decline of community and the emergence of pseudo-communities. The course will focus on a comparative analysis of the major American community studies. *Three semester hours.*

Mr. Olson.

245b. COMPARATIVE SOCIAL INSTITUTIONS.

Cultural variations of selected institutions and social groupings. Data is drawn from such regions as the Caribbean, Melanesia, Micronesia, Russia, China, Africa, and the United States. *Three semester hours.*

Mr. Gerber.

25a. LAW AND SOCIETY. ✓

First semester: Law and the social order; power and social control. The basis and theory of the legal order and legal institutions. Second semester: Change and current legal problems. *Three semester hours.*

Mr. Killian.

255a. SOCIAL CONTROL, SOCIOLOGICAL THEORY AND LEGAL THEORY.

A study of the application of social theory and of sociological theory to the analysis of law and legal institutions. The background of "sociological jurisprudence" and of "legal realism" in the nineteenth century and the early twentieth century. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Two semester hours.*

Mr. Killian.

26b. URBAN SOCIAL STRUCTURE.

A detailed exploration of the major theories of urbanization and the city. Begins with early theorists and includes most recent developments in urban social theory. Ecological

and social area analysis, urban political theory, social participation, urban social change theory. *Three semester hours.* Mr. Olson.

27b. URBAN SOCIAL SERVICE SYSTEMS.

An organizational analysis of selected social service agencies—their histories, goals, philosophies, structures, and programs—viewed in relation to the community as a social system and urban social problems. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.* Mr. Callender.

275a. THE ETHNIC COMMUNITY.

An intensive investigation of the structure of ethnic communities with consideration of customs, life cycle, folk medicine, religion, and language. *Three semester hours.*

Mr. Gerber.

277a. THE NEIGHBORHOOD AS A SOCIAL SYSTEM.

Not offered, 1968-69.

An analysis of the social, economic, geographic, and psychological characteristics of neighborhoods in Worcester. Emphasis is placed on delineating neighborhoods and examining their historical subsystems. *Three semester hours.*

28. HONORS.

Mr. Callender and Mr. Olson.

Three semester hours each semester.

Staff.

290a. CLASSICAL SOCIOLOGICAL THEORY.

Not offered, 1968-69.

An analysis of classical European theory, including Marx, Weber, Freud, Durkheim, Simmel and Mannheim, emphasizing the historical, dramatistic, systematic elements in their work. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.*

Mr. Olson.

290b. CONTEMPORARY SOCIOLOGICAL THEORY.

Not offered, 1968-69.

An examination of the main theoretical and critical perspectives employed by American sociologists in their description and analysis of social life. The work of Parsons, Mills, Merton, Riesman, Goodman and others is evaluated in the light of the European tradition of social analysis and what it offers for an understanding of American society. Prerequisite: consent of the instructor. *Three semester hours.*

Mr. Olson.

291a. SEMINAR: SUICIDE.

A detailed examination of the major sociological literature dealing with suicide. Emphasis is on the classical studies and theoretical formulations and recent studies. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.*

Mr. Callender.

293a. DEATH AND SOCIAL CONTROL.

Not offered, 1968-69.

An examination of how assumptions about life and death shape the structure of personal and group action in selected societies. The course will focus on the relationship of death assumptions to socially structured motivational concepts (e.g. salvation, career, success, nirvana). Attention will also be given to general cognitive structures such as space and time and to the uses of death in everyday activity. Prerequisite: In addition to the usual prerequisite, consent of the instructor. *Three semester hours.*

Mr. Callender.

296. URBAN SEMINAR.

Twelve outside speakers, representing Theory, Research, and Planning in the area of urban social change offer current material they are working on. Students read prior to each seminar relevant materials to supplement the seminar. Prerequisite: In addition to the usual prerequisite, consent of the department chairman. *One semester hour each semester.*

Staff.

297. THE SOCIOLOGY OF CULTURE.

First semester: The main development in the several arts and social sciences during the period which has been designated modern and which covers the years 1890-1920. With modernism as background, the period from 1930-1960 is reviewed as an epoch of professionalism. Second semester: An analysis of recent developments in the several fields of culture. Modernism is interpreted in light of the sociological theories of Weber, Durkheim and Freud. Major recent thinkers covered include Herbert Marcuse, Marshall McLuhan, and C. Wright Mills, among others. Indivisible. Replaces Soc. 290 for 1968-69 and fulfills requirement for sociological theory course. *Three semester hours each semester.*

36. READINGS IN SOCIAL ANTHROPOLOGY.

One to three semester hours.

Mr. Stein.

Staff.

37. READINGS IN SOCIOLOGY.

One to three semester hours.

Staff.

38. RESEARCH.

One to three semester hours.

Staff.

380. RESEARCH SEMINAR.

Two semester hours.

Staff.

39. THESIS.

Three semester hours.

Staff.

390. THESIS SEMINAR.

Two semester hours.

Staff.

COURSES AT ASSUMPTION COLLEGE

Soc. 109. SOCIOLOGY OF RELIGION.

Offered second semester.

Mr. Estus.

Soc. 110. SEMINAR IN INTERPERSONAL THEORY.

Offered first semester.

Mr. Estus.

COURSES AT THE COLLEGE OF THE HOLY CROSS

Soc. 176. CULTURES OF THE MIDDLE EAST.

Offered first semester.

Mr. Al-Khazraji.

Soc. 206. POPULATION.

Offered second semester.

Mr. Imse.

Soc. 245. CLASS CONFLICT AND SOCIAL CHANGE.

Offered first semester.

Fr. Fallon.

Soc. 246. SOCIAL STRATIFICATION.

Offered second semester.

Mr. Johnson.

Soc. 263. MEDICAL SOCIOLOGY.

Offered second semester.

Fr. MacMillan.

Soc. 264. POLITICAL SOCIOLOGY.

Offered second semester.

Mr. Johnson.

Theatre Art

PARTICIPATING FACULTY

Phillip A. Graneto, M.F.A., *Lecturer in Theatre Art; Designer/Technical Director, Fenwick Theatre, College of the Holy Cross*

Edward J. Herson, M.A., *Lecturer in Theatre Art; Director, Fenwick Theatre, College of the Holy Cross*

Bernard J. McInerney, M.F.A., *Instructor in Theatre Art, College of the Holy Cross*

Neil R. Schroeder, Ph.D., *Associate Professor of English, Clark University**

William C. Sigalis, B.A., *Affiliate; Director, Clark University Players Society*

*On leave of absence, second semester, 1968-69.

UNDERGRADUATE PROGRAM

Begun in the academic year 1968-69, the program in Theatre Art is offered through the cooperation of Clark University, the College of the Holy Cross, and Assumption College. It is designed to give the student both practical and scholarly experience in all phases of theatre, to develop theatre artists with a sound humanistic education, and to prepare them for graduate training in educational and professional theatre. Courses are open to all qualified undergraduates who are willing to devote the time and energy which are necessary for their completion.

In many cases, students who take courses in theatre will be expected as part of their course work to participate in productions by the Clark University Players Society and by the Fenwick Theatre at Holy Cross. Fenwick Theatre has enlisted a semi-professional company, Entr'Actors Guild, Inc., to act and work with students in producing the major season of five or six plays. Consequently, the annual season in Fenwick Theatre serves several purposes. It provides the students and residents of the Worcester area with theatrical productions of high quality. It also serves as a laboratory where students of Theatre Art and other interested persons may learn the arts and skills of the theatre. Finally, it is a showcase where students of the theatre, after they have developed sufficiently through their course work, may practice their art for a discerning public.

All students and faculty of the colleges participating in the program (Clark, Holy Cross, and Assumption) may apply for acting and technical positions in plays of the annual season at Fenwick Theatre. Other persons may do so by permission of Mr. Edward Herson, Director of the Fenwick Theatre, and the director of the play for which they apply.

Registration in any course in Theatre Art may be made only by permission of the instructor. Clark students who wish to take courses in the field should first apply to Mr. Schroeder of the Department of English at Clark. Entering freshmen who plan to take courses should see Mr. Schroeder before they register for their first year.

Many of the courses in the program will be offered on other campuses. Clark students will be expected to supply their own transportation.

While it is not possible at present for Clark undergraduates to major in Theatre Art, a full program of courses is available for those interested students who are willing to devote the time to it. The program provides more than adequate training and prepara-

tion for graduate study in theatre. Those students who intend to take the full theatre curriculum should, for the most part, choose a major which is closely allied, specifically Classics, English, Fine Arts, or a modern foreign language. It should be noted that Theatre Art courses satisfy some of the requirements for the English major; consequently, an English major can, in the least number of courses, combine a full theatre program with his major.

The Theatre Art program is designed around a core curriculum of basic courses with two sequences of advanced courses—one for potential actors and one for potential stage designers. Within the acting sequence allowance is made for qualified students to choose two semester courses in advanced directing.

Core Curriculum. All students who take the full Theatre Art program should take the following courses, preferably before their junior year:

1. Theatre Art 10a. Basic Acting Skills.
2. Theatre Art 12a. Basic Technical Theatre Practice.
3. Theatre Art 13a. Introduction to Stage Design: Theory.
4. Theatre Art 14a. Introduction to Play Direction.

In addition, all students who take the full program should take at least two of the following:

1. Theatre Art 151a. Theatre History and Criticism I.
2. Theatre Art 152b. Theatre History and Criticism II.
3. Theatre Art 153a. Theatre History and Criticism III.

Advanced Courses: Acting Sequence. The full sequence of the acting program consists of at least four additional courses as follows:

1. Theatre Art 112b. Improvisations for the Theatre.
2. Theatre Art 113a. Styles of Acting.
3. At least two of the following:
 - a. Theatre Art 111b. Oral Interpretation of Literature.
 - b. Theatre Art 115b. Scene Study I.
 - c. Theatre Art 116b. Scene Study II.

Especially qualified students who wish to gain training in advanced directing may, with the permission of the instructor, substitute the following for Theatre Art 115b and 116b, usually in their senior year:

1. Theatre Art 145a. Advanced Play Direction I.
2. Theatre Art 146b. Advanced Play Direction II.

Advanced Courses: Design Sequence. The full sequence of the design program consists of five additional courses as follows:

1. Fine Arts 100. Art Workshop; or
Fine Arts 111. Basic Painting; or an equivalent two-semester course taken at a qualified art school. In exceptional cases this requirement, which is a prerequisite for all advanced stage design courses, may be waived.
2. Theatre Art 130b. Introduction to Stage Design: Technique.
3. Theatre Art 133b. Historical Styles of Stage Design.
4. Theatre Art 134b. Theatrical Styles of Stage Design.

Related Courses.

1. All Theatre Art students should take as many courses in dramatic literature as possible. The student should consult the catalogues of Holy Cross and Assumption as well as Clark to find courses in this category.

2. All Theatre Art students should take at least one semester course (three semester hours) and preferably two courses in the history of art.

3. All Theatre Art students, especially those who plan to pursue graduate study in the field, are advised to gain proficiency in at least two modern foreign languages.

COURSES

F10a. BASIC ACTING SKILLS.

Study and intensive practice in the basic techniques of producing good voice and speech. Practice in the proper formation of the sounds of English and correction of regional accent. Laboratory in stage movement. Taught at Holy Cross. *Three semester hours.*

Mr. McInerney.

F12a. BASIC TECHNICAL THEATRE PRACTICE.

Classroom instruction in the theories and techniques of the building, painting, and lighting of stage settings; the organization and operation of production crews; and the fundamentals of make-up and costuming. Laboratory hours to be arranged. Taught at Holy Cross. *Three semester hours.*

Mr. Graneto.

F13a. INTRODUCTION TO STAGE DESIGN: THEORY.

A course intended to acquaint the general student with the basic steps involved in the creation of stage settings, including a discussion of design methods such as ground plan, compositional elevation, mechanical perspective, color theory, and stage lighting. Taught at Holy Cross. *Three semester hours.*

Mr. Graneto.

F14a. INTRODUCTION TO PLAY DIRECTION.

Study of the writings, both theoretical and practical, of prominent directors, followed by practice in classroom exercises or laboratory studio productions of the basic techniques of play selection, casting, scheduling and conducting rehearsals, composition, picturization, movement, rhythm, and pantomimic dramatization. Taught at Holy Cross. *Three semester hours.*

Mr. Herson.

F111b. ORAL INTERPRETATION OF LITERATURE.

A course in the theory and practice of interpreting the meaning of the printed word through development of skill in the oral reading of poetry and drama. Taught at Holy Cross. *Three semester hours.*

Mr. McInerney.

F112b. IMPROVISATIONS FOR THE THEATRE.

A graduated system of problems and theatre games designed to train the student to free himself for concentration and spontaneous effort to create a situation imaginatively and to play a role in it. Taught at Holy Cross. *Three semester hours.*

Mr. McInerney.

113a. STYLES OF ACTING.

Not offered, 1968-69.

Analysis of the practice of the actor's art from the Greeks to the present and of the historical, social, and aesthetic causes of the various styles. Each student will be required to perform, and possibly direct, in each of the principal styles as well as submit papers on a chosen specialty. Taught at Holy Cross. Prerequisite: Theatre Art 10a and one semester of theatre history. *Three semester hours.*

Mr. McInerney.

115b. SCENE STUDY I. Not offered, 1968-69.
Practice to the level of class performance of roles in scenes and one-act plays. Assigned research, and analysis of a major role scene by scene. Taught at Holy Cross. Prerequisite: Theatre Art 10a and consent of instructor. *Three semester hours.* Mr. McInerney.

116b. SCENE STUDY II. Not offered, 1968-69.
Preparation of scenes for class and/or laboratory performance and criticism. Each student will keep a written record of the materials and techniques used in preparing the roles he plays and a critical diary of rehearsals, performances, and class evaluations of performance. Taught at Holy Cross. Prerequisite: Theatre Art 115b and consent of instructor. *Three semester hours.* Mr. McInerney.

F130b. INTRODUCTION TO STAGE DESIGN: TECHNIQUE.
An introductory course exclusively for students who have a strong interest in the visual aspects of production and are planning to continue the study of stage design. The student will be expected to master the fundamentals of mechanical perspective and other scenographic techniques such as ground plans, working drawings, and light plots for the stage. Taught at Holy Cross. Prerequisite: Theatre Art 13a; at least one course in drawing and painting, which may be taken simultaneously with the course, and/or submission of sketches or similar materials which demonstrate some talent in the graphic arts. *Three semester hours.* Mr. Graneto.

133b. HISTORICAL STYLES OF STAGE DESIGN. Not offered, 1968-69.
Problems will be selected classics of dramatic literature representing important periods in theatre history. The student will be expected to expand his knowledge of the theatre, art, and architecture of these periods and, from that knowledge, evolve a stage design for a modern production of each play assigned. Taught at Holy Cross. Prerequisite: Theatre Art 130b, one semester of art history, and one semester of theatre history. *Three semester hours.* Mr. Graneto.

134b. THEATRICAL STYLES OF STAGE DESIGN. Not offered, 1968-69.
Problems will include different types of theatrical entertainment such as opera, ballet, modern dance, musical comedy, and circus. Projects from this course should exhibit the designer's ability and versatility and provide a portfolio of sketches required for admission to graduate study in theatrical design. Taught at Holy Cross. Prerequisite: Theatre Art 133b. *Three semester hours.* Mr. Graneto.

145a. ADVANCED PLAY DIRECTION I. Not offered, 1968-69.
This course will stress the creative relationship of the director to the actor. Readings in anecdotal and diary accounts of rehearsals and productions. Laboratory studio production of at least one one-act play or an equivalent scene from a longer play. Taught at Holy Cross. Open to seniors and, in exceptional cases, juniors. Prerequisite: consent of instructor. *Three semester hours.* Mr. Herson.

146b. ADVANCED PLAY DIRECTION II. Not offered, 1968-69.
Stress will be placed upon the director's relationship to the set and lighting designer in both the planning and execution of the production. Laboratory studio production of at least one one-act play or long scene in cooperation with the students in the advanced

design courses. A complete prompt book will be required for each studio production. Taught at Holy Cross. Open to seniors and, in exceptional cases, juniors. Prerequisite: Theatre Art 145a and consent of instructor. *Three semester hours.* Mr. Herson.

F151a. THEATRE HISTORY AND CRITICISM I:

HISTORY OF THEATRE ARCHITECTURE AND SCENE DESIGN.

A study of types of theatres, techniques of theatre architecture, and the methods, techniques, and results of stage design and costume in their historical context from the Greeks to the present. Taught at Clark. *Three semester hours.* Mr. Schroeder.

F152b. THEATRE HISTORY AND CRITICISM II:

Not offered, 1968-69.

HISTORY OF PRODUCTION METHODS AND ACTING.

A survey of acting, directing, and production techniques and their interaction with the audience from the Greeks to the present. The course will also study the emergence of the national theatres of Western civilization and their historical and cultural significance. Taught at Clark. *Three semester hours.* Mr. Schroeder.

F153a. THEATRE HISTORY AND CRITICISM III:

Not offered, 1968-69.

HISTORICAL STUDIES IN WORLD DRAMA AND DRAMA CRITICISM.

A survey of the major eras of dramatic literature and criticism in Western civilization which includes a study of the major theatrical genres (drama, mime, ballet, opera, etc.) and their aesthetic and cultural significance. Taught at Clark. *Three semester hours.*

Mr. Schroeder.



DIRECTORIES

The Faculty

Members of the faculty and officers of instruction for 1968-69 are listed alphabetically with their titles, degrees and years at Clark University. Persons no longer on the faculty but who served during the previous year are included also.

President

FREDERICK HERBERT JACKSON, Ph.D., LL.D., President; A.B., Brown University, 1941; M.A., University of Pennsylvania, 1948; Ph.D., 1950; LL.D., Brown University, 1968. (1967-)

Emeriti

HOWARD B. JEFFERSON, Ph.D., LL.D., L.H.D., Litt.D., President, Emeritus; A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956; Litt.D., College of the Holy Cross, 1962; L.H.D., Clark University, 1967; LL.D., Emerson College, 1968. (1946-67)

LEROY ALLSTON AMES, A.M., Professor of English Literature, Emeritus. (1908-44)

SAMUEL J. BRANDENBURG, Ph.D., Professor of Economics and Sociology, Emeritus. (1923-50)

JESSE LUNT BULLOCK, Ph.D., Professor of Chemistry, Emeritus. (1926-59)

GUY HARVEY BURNHAM, A.M., Instructor in Geography and Cartographer, Emeritus. (1922-66)

LYDIA PERRY COLBY, B.S., Registrar, Emeritus. (1932-66)

ROBERT STANLEY ILLINGWORTH, A.M., Ed.M., Professor of Speech and Drama, Emeritus. (1931-58)

VERNON JONES, Ph.D., Professor of Educational Psychology, Emeritus. (1926-68)

HENRY DONALDSON JORDAN, Ph.D., L.H.D., Professor of English History, Emeritus. (1931-1967)

DWIGHT ERWIN LEE, Ph.D., L.H.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School, Emeritus. (1927-1967)

JAMES ACKLEY MAXWELL, Ph.D., L.H.D., Professor of Economics, Emeritus. (1924-1967)

RAYMOND EDWARD MURPHY, Ph.D., Professor of Economic Geography, Emeritus. (1946-68)

PERCY MARTIN ROOPE, Ph.D., Professor of Physics, Emeritus. (1921-62)

SAMUEL VAN VALKENBURG, Ph.D., Professor of Geography, Emeritus. (1926-29, 1932-62)

Faculty and Officers of Instruction

VERNON AHMADJIAN, Ph.D., Professor of Botany. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-68)

ALFRED ANDEREAU, Ph.D., Assistant Professor of German. Ph.D., University of Zurich, 1964. (1968-)

JEREMY ANDERSON, Ph.D., Assistant Professor of Geography. A.B., Yale University, 1956; M.A., University of Washington, 1959; Ph.D., 1964. (1966-)

KARL OSCAR EMANUEL ANDERSON, Ph.D., Professor of English. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-)

ROY STUART ANDERSON, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)

- KARL JOHN RICHARD ARNDT, Ph.D., Professor of German. A.M., Washington University, 1928; Ph.D., The Johns Hopkins University, 1933. (1950-)
- ROBERT WILLIAM BAKER, Ph.D., Professor of Psychology, Dean of Students. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)
- GEORGE ANTHONY BALKO, JR., M.B.A., Chairman, Business Administration Program. M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952. (1956-)
- CHARLOTTE L. BALL, M.A., Instructor in Education. A.B., Bates College, 1927; M.A., Clark University, 1960. (1967-)
- ROBERT A. BARAKAT, M.A., Assistant Professor of English. B.A., Suffolk University, 1961; M.A., University of Texas at El Paso, 1964. (1968-)
- RAYMOND EDMOND BARBERA, Ph.D., Associate Professor of Romance Languages. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)
- CLAUDE WILLIS BARLOW, Ph.D., Professor of Classics. A.B., Amherst College, 1928; A.M., Indiana University, 1930; Ph.D., Yale University, 1935. (1947-)
- STEVEN BARON, Ph.D., Assistant Professor of Mathematics. B.A., McGill University, 1959; M.S. Rensselaer Polytechnic Institute, 1962; Ph.D., McGill University, 1967. (1968-)
- TILTON MARSHALL BARRON, B.L.S., Librarian. A.B., Colorado College, 1937; B.L.S., Columbia University School of Library Service, 1940. (1954-)
- THOMAS C. BARROW, Ph.D., Associate Professor of American History. B.A., Harvard University, 1952; M.A., 1954; Ph.D., 1961. (1967-)
- MELVIN BARTON, Ph.D., Consultant to Psychological Services Center. B.A., City College of New York, 1957; M.A., 1959; Ph.D., Clark University, 1964. (1965-)
- LINDA M. B. BARTOSHUK, Ph.D., Assistant Professor (affiliate) of Physiology. B.A., Carleton College, 1960; Sc.M., Brown University, 1963; Ph.D., 1965. (1967-)
- HENRY D. BATES, Ph.D., Assistant Professor of Psychology. B.A., City College of New York, 1953; M.A., New School for Social Research, New York, 1961; Ph.D., University of Missouri, 1966. (1966-68)
- NANCY M. BAUM, M.A., Instructor in Romance Languages. A.B., Clark University, 1963; M.A.Ed., 1965. (1966-)
- JAMES FRANKLIN BEARD, JR., Ph.D., Professor of English. A.B., Columbia College, 1940; A.M., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)
- ROBERT NELSON BECK, Ph.D., Professor of Philosophy. A.B., Clark University, 1947; A.M., Boston University, 1948; Ph.D., 1950. (1948-67; 1968-)
- FREDERICK W. BELL, Ph.D., Associate Professor of Economics. B.S., Wayne State University, 1957; M.A., 1961; Ph.D., 1964. (1965-68)
- CLEMENS E. BENDA, M.D., Professor (affiliate) of Psychology. M.D., University of Berlin, 1922. (1958-)
- ROGER BIBACE, Ph.D., Associate Professor of Clinical Psychology, Director of Psychological Services Center. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)
- GEORGE ATHAN BILLIAS, Ph.D., Professor of American History. A.B., Bates College, 1948; A.M., Columbia University, 1949; Ph.D., 1958. (1962-)
- ARTHUR J. BINDMAN, Ph.D., Lecturer in Psychology. A.B., Harvard University, 1948; M.A., Boston University, 1949; Ph.D., 1955. (1966-)
- JAMES M. BLAUT, Ph.D., Professor of Geography. B.S., University of Chicago, 1950; M.S., Louisiana State University, 1954; Ph.D., 1958. (1967-)

- CHARLES S. BLINDERMAN, Ph.D., Associate Professor of English. A.B., New York University, 1952; A.M., 1953; Ph.D., University of Indiana, 1957. (1962-)
- DANIEL RAYMOND BORG, Ph.D., Associate Professor of European History. A.B., Gustavus Adolphus College, 1953; A.M., Yale University, 1957; Ph.D., 1963. (1961-)
- MARTYN J. BOWDEN, Ph.D., Assistant Professor of Geography. B.A., University of London, 1957; M.A., University of Nebraska, 1959; Ph.D., University of California, Berkeley, 1967. (1964-)
- DAEG S. BRENNER, Ph.D., Assistant Professor of Chemistry. B.S., Rensselaer Polytechnic Institute, 1960; Ph.D., Massachusetts Institute of Technology, 1964. (1967-)
- JOHN J. BRINK, Ph.D., Associate Professor of Biochemistry. B.Sc., University of Orange Free State, 1955; B.Sc. (Hons.), University of the Witwatersrand, 1956; Ph.D., University of Vermont, 1962. (1966-)
- DONALD MONROE BROVERMAN, Ph.D., Lecturer in Psychology. A.B., Union College, 1952; M.A., Clark University, 1956; Ph.D., 1958. (1964-)
- HERRINGTON J. BRYCE, Ph.D., Assistant Professor of Economics. B.A., Mankato State College, 1960; Ph.D., Syracuse University, 1966. (1967-)
- WESLEY E. BRYERS, Ph.D., Associate Professor of Geology. A.B., Rutgers University, 1956; Ph.D., Columbia University, 1964. (1961-68)
- WILLARD D. CALLENDER, JR., Ph.D., Assistant Professor of Sociology. A.B., Bates College, 1958; M.A., University of Connecticut, 1960; Ph.D., 1967. (1966-)
- GEORGE CAMOUGIS, Ph.D., Associate Professor (affiliate) of Physiology. B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-)
- ROBERT FRANCIS CAMPBELL, Ph.D., Professor of American History, Dean of the College. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-57; 1960-)
- WILLIAM HOYT CARTER, JR., Ph.D., Professor of English. A.B., Middlebury College, 1936; A.M., Harvard University, 1938; Ph.D., 1951. (1949-)
- CONSTANTINE P. CAVARNOS, Ph.D., Visiting Associate Professor of Philosophy. A.B., Harvard College, 1943; A.M., 1947; Ph.D., 1948. (1967-68)
- LEONARD E. CIRILLO, Ph.D., Assistant Professor of Psychology. B.A., City College of New York, 1958; M.A., Clark University, 1962; Ph.D., 1965. (1968-)
- JAMES MADISON COFFEE, Ed.D., Associate Professor of Education. A.B., Duke University, 1949; A.M., Cornell University, 1950; Ed.D., Harvard University, 1957. (1954-68)
- KAREN C. COHEN, Ph.D., Assistant Professor of Education. B.A., Harvard University, 1963; M.S., Johns Hopkins University, 1964; Ph.D., 1965. (1966-)
- MORRIS HAROLD COHEN, Ph.D., Professor of Government. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-)
- SAUL BERNARD COHEN, Ph.D., Professor of Geography. A.B., Harvard College, 1947; A.M., Harvard University, 1950; Ph.D., Harvard University, 1955. (1965-)
- GERARD T. CORCORAN, M.A., Registrar. B.A., University of Connecticut, 1957; M.A., 1961. (1966-)
- C. ALTON COULTER, Ph.D., Associate Professor of Physics. B.A., Howard College, 1956; M.S., University of Alabama, 1959; M.A., Harvard University, 1963; Ph.D., 1964. (1966-)
- SAMUEL PENDLETON COWARDIN III, Ph.D., Associate Professor of Fine Arts. A.B., Harvard University, 1943; A.M., 1948; Ph.D., 1963. (1949-)
- WALTER HOBSON CROCKETT, Ph.D., Professor of Psychology. A.B., University of Kansas, 1947; A.M., 1949; Ph.D., University of Michigan, 1953. (1957-68)

- JESSIE CAMPBELL CUNNINGHAM, A.M., Associate Professor of English. Ph.B., University of Chicago, 1948; A.M., 1952. (1957-)
- JOSEPH COLCORD CURTIS, Ph.D., Associate Professor of Zoology. B.A., Cornell University, 1951; Ph.D., Brown University, 1960. (1963-)
- JOHN M. DANSKIN, Ph.D., Professor of Mathematics. B.A., University of California, Los Angeles, 1943; M.A., University of California, Berkeley, 1948; Ph.D., 1949. (1968-)
- JOHN A. DAVIES, Ph.D., Assistant Professor of Physics. B.S., University of Maryland, 1953; M.S., 1954; Ph.D., 1960. (1963-)
- TAMARA DEMBO, Ph.D., Professor of Psychology. Ph.D., University of Berlin, 1930. (1953-)
- THOMAS JOSEPH DOLPHIN, A.B., Director of The Evening College, Director of the Summer School. A.B., Rutgers University, 1951. (1957-)
- JAMES STANHOPE EDWARDS, A.M., Associate Professor of German. A.B., Brown University, 1936; A.M., 1938. (1947-)
- KAREN LOUISE ERICKSON, Ph.D., Assistant Professor of Chemistry. B.S., Siena Heights College, 1960; Ph.D., Purdue University, 1964. (1965-)
- CHARLES W. ESTUS, Ph.D., Assistant Professor of Sociology. A.B., Drury College, 1952; M.A., Duke University, 1960; Ph.D., New York University, 1966. (1966-68)
- RICHARD B. FORD, Ph.D., Assistant Professor of Comparative History. B.A., Denison University, 1957; M.A.T., Yale University, 1959; Ph.D., University of Denver, 1966. (1968-)
- WESLEY METCALF FULLER, M.Mu., Associate Professor of Music. B.Mu., Oberlin Conservatory of Music, 1953; M.Mu., Boston University, 1958. (1963-)
- ROLAND F. GAUDETTE, A.B., Assistant in Physical Education. A.B., Clark University, 1962. (1967-)
- STANFORD N. GERBER, Ph.D., Assistant Professor of Sociology. B.A., University of Kansas City, 1955; M.A., 1957; Ph.D., University of Missouri, 1966. (1968-)
- NORMAN GESCHWIND, M.D., Professor (affiliate) of Psychology. A.B., Harvard University, 1947; M.D., Harvard Medical School, 1951. (1964-)
- HAROLD GOODGLASS, Ph.D., Professor (affiliate) of Psychology. A.B., College of the City of New York, 1939; A.M., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)
- RICHARD J. GORDON, Ph.D., Assistant Professor of Education. A.B., Dartmouth College, 1962; M.A., Harvard University, 1963; Ph.D., New York University, 1966. (1966-)
- ROCHELEAU ZEPHIRIN GRANGER, JR., A.M. in Ed., Director of Physical Education for Men. A.B., Clark University, 1938; A.M. in Ed., 1939. (1949-)
- KATHRYN H. GRAY, M.S., Assistant Professor of Geology. B.A., College of Wooster, O., 1947; M.S., Northwestern University, 1950. (1967-68)
- SANTE GRAZIANI, M.F.A., Associate Professor (affiliate) of Fine Arts. B.F.A., Yale University, 1942; M.F.A., 1948. (1958-)
- GERALD N. GROB, Ph.D., Professor of American History. B.S., College of the City of New York, 1951; A.M., Columbia University, 1952; Ph.D., Northwestern University, 1958. (1957-)
- IAN D. K. HALKERSTON, Ph.D., Associate Professor (affiliate) of Endocrinology. B.Sc., University of Reading, England, 1941; Ph.D., Boston University, 1960. (1967-)
- GEORGE EDWARD HARGEST, M.B.A., Associate Professor of Economics. B.S., Temple University, 1933; M.Ed., 1937; M.B.A., Boston University, 1947. (1942-)

- SEYMOUR HAYDEN, Ph.D., Associate Professor of Mathematics. A.B., University of Wisconsin, 1947; A.M., Harvard University, 1948; Ph.D., 1963. (1957-68)
- SHERMAN STRONG HAYDEN, Ph.D., Professor of International Relations. A.B., Harvard University, 1930; LL.B., 1933; A.M., Columbia University, 1936; Ph.D., 1942. (1946-)
- EARL E. HAYS, Ph.D., Professor (affiliate) of Physics. A.B., Allegheny College, 1940; Ph.D., Northwestern University, 1949. (1961-)
- RICHARD P. HIGHT, Ph.D., Assistant Professor (affiliate) of Geology. (1967-)
- SERENA SUE HILSINGER, Ph.D., Assistant Professor of English. A.B., Douglass College, 1959; Ph.D., University of Connecticut, 1964. (1962-)
- RICHARD A. HOWARD, M.A., Lecturer (affiliate) Computer Science.
- ROBERT MOOERS HYDE, A.M., Executive Vice President. A.B., Rutgers University, 1947; A.M., University of Pennsylvania, 1949. (1954-)
- JOHN O. IATRIDES, Ph.D., Lecturer in Russian History. B.A., Ohio Wesleyan University, 1953; M.A. University of Michigan, 1954; Ph.D., Clark University, 1962. (1967-)
- PAUL T. INGLEFIELD, Ph.D., Assistant Professor of Chemistry. B.S., University of Glasgow, 1962; Ph.D., University of British Columbia, 1966. (1967-)
- HARRY L. JACOBS, Ph.D., Associate Professor (affiliate) of Physiology. B.A., University of Delaware, 1950; M.A., 1951; Ph.D., Cornell University, 1955. (1967-)
- H. WILLIAM JOHANSEN, Ph.D., Assistant Professor of Botany. B.A., San Jose State College, 1955; M.A., San Francisco State College, 1961; Ph.D., University of California, Berkeley, 1966. (1968-)
- ROGERS P. JOHNSON, M.A., Visiting Lecturer in Sociology. B.A., Antioch College, 1947; M.A., Columbia University, 1960. (1964-66; 1967-68)
- VERNON JONES, Ph.D., Professor of Educational Psychology. B.A., University of Virginia, 1920; M.A., 1920; M.A., Columbia University, 1924; Ph.D., 1926. (1926-68)
- BERNARD KAPLAN, Ph.D., Professor of Psychology. A.B., Brooklyn College, 1948; A.M., Clark University, 1950; Ph.D., 1953. (1955-)
- ROGER E. KASPERSON, Ph.D., Assistant Professor of Government and Geography. A.B., Clark University, 1959; M.A., University of Chicago, 1961; Ph.D., 1966. (1968-)
- ROBERT W. KATES, Ph.D., Professor of Geography. A.M., University of Chicago, 1960; Ph.D., 1962. (1962-)
- GERSON KEGELES, Ph.D., Professor of Chemistry. B.S., Yale University, 1937; Ph.D., 1940. (1951-68)
- JOHN F. KENNISON, Ph.D., Associate Professor of Mathematics. B.S., Queens College, 1959; A.M., Harvard University, 1960; Ph.D., 1963. (1963-)
- HELEN J. KENNEY, Ed.D., Associate Professor in Education. A.B., Emmanuel College, 1944; M.Ed., Boston College, 1953; Ed.D., Boston University, 1959. (1968-)
- FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology. LL.B., New York University, 1925; A.B., 1934. (1947-)
- ROBERT W. KILMOYER, JR., B.A., Instructor in Mathematics. B.A., Lebanon Valley College, 1961. (1966-)
- JESSE FANNIN KING, A.M., Associate Professor of Romance Languages. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946-)
- EDWARD L. KLAIBER, M.D., Lecturer in Psychology. A.B., Syracuse University, 1952; M.D., State University of New York, 1956. (1964-)
- WERNER P. KOELLA, M.D., Professor (affiliate) of Neurophysiology. M.D., University of Zurich, 1942. (1964-)

- WILLIAM A. KOELSCH, Ph.D., Assistant Professor of History and Geography. Sc.B., Bucknell University, 1955; A.M., Clark University, 1959; Ph.D., University of Chicago, 1966. (1967-)
- BARBARA CASTLE KOHIN, Ph.D., Assistant Professor of Physics. B.S., College of William and Mary, 1953; M.S., University of Maryland, 1956; Ph.D., 1960. (1967-68)
- ROGER P. KOHIN, Ph.D., Associate Professor of Physics. B.Sc., Notre Dame University, 1953; Ph.D., University of Maryland, 1961. (1962-)
- ARTHUR M. KROLL, Ed.D., Assistant Professor of Education. A.B., Clark University, 1962; Ed.M., Harvard University, 1964; Ed.D., 1966. (1967-)
- DONALD MAX KRUS, Ph.D., Professor of Psychology. B.A., Drew University, 1949; A.M., Clark University, 1951; Ph.D., 1957. (1958-68)
- WILLIAM C. KVARACEUS, Ed.D., Professor of Education. A.B., Boston College, 1934; Ed.M., Harvard University, 1936; Ed.D., 1943. (1968-)
- DONALD B. LAFFERTY, A.M., Instructor in Music. (1967-68)
- JAMES D. LAIRD, Ph.D., Assistant Professor of Psychology. B.A., Middlebury College, 1962; Ph.D., University of Rochester, 1966. (1966-)
- CONNOR LAZAROV, Ph.D., Assistant Professor of Mathematics. B.S., University of Michigan, 1959; A.M., Harvard University, 1960. (1964-68)
- DWIGHT ERWIN LEE, Ph.D., Coordinator of Research. (1967-)
- ROBERT E. LINGNER, M.A., Assistant Professor (affiliate) of Geology. B.A., Clark University, 1954; M.A., Colby College, 1956. (1968-)
- WARREN LITSKY, Ph.D., Professor (affiliate) of Bacteriology. A.B., Clark University, 1945; M.S., University of Massachusetts, 1948; Ph.D., Michigan State University, 1951. (1967-)
- JAMES R. MACRIS, Ph.D., Professor of English. B.B.A., St. John's University, 1941; M.A., Teachers College, Columbia University, 1950; Ph.D., 1955. (1968-)
- GILBERT SCOTT MARKLE, Ph.D., Assistant Professor of Philosophy. B.S., Rensselaer Polytechnic Institute, 1961; Doctorat d'Université, University of Paris, 1963; Ph.D., Yale University, 1967. (1966-)
- ARTHUR H. MARTIN, M.A., Instructor in English. A.B., Clark University, 1962; M.A., Brandeis University, 1967. (1964-68)
- GEORGE F. McCLEARY, M.S., Assistant Professor of Geography. A.B. Yale, 1959; M.S., University of Wisconsin, 1963. (1966-)
- MARCUS A. MCCORISON, M.S., Lecturer in American Colonial History. B.A., Ripon College, 1950; M.A., University of Vermont, 1951; M.S., Columbia University, 1954. (1967-)
- JOSEPH P. McEVoy, Ph.D., Assistant Professor of Physics. B.S., St. Joseph's College, 1959; M.S., University of Pennsylvania, 1962; Ph.D., University of London (Imperial College), 1967. (1968-)
- FREDERICK EUGENE MELDER, Ph.D., Professor of Economics. B.B.A., University of Washington, 1926; M.A., 1931; Ph.D., University of Wisconsin, 1936. (1937-46; 1950-)
- CONSTANTINE N. MICHALOPOULOS, Ph.D., Assistant Professor of Economics. B.A., Ohio Wesleyan University, 1960; Ph.D., Columbia University, 1965. (1967-)
- JOHN MILLER, M.M., Assistant Professor (affiliate) of Bassoon. B.S., Massachusetts Institute of Technology; M.M., New England Conservatory of Music. (1968-)
- DAVID M. MORIARTY, M.D., Professor (affiliate) of Clinical Psychology. M.D., Boston University, 1947. (1960-)

- ROBERT I. MORSE, Ph.D., Assistant Professor in Chemistry. S.B. in Chemistry; S.B. in Humanities & Sc., M.I.T., 1963; M.S., Yale University, 1964; Ph.D., 1966. (1968-)
- DAVID GILLMAN MOULTON, Ph.D., Professor of Physiology. B.S., Glasgow University, 1954; Ph.D., University of Birmingham, 1958. (1965-)
- JOHN T. MURPHEY, B.S., Assistant Professor of Fine Arts. B.S. in Ed., Tufts University, 1959. (1965-)
- RAYMOND EDWARD MURPHY, Ph.D., Professor of Economic Geography. B.S., Missouri School of Mines and Metallurgy, 1923; M.S., University of Wisconsin, 1926; Ph.D., 1930. (1946-68)
- HOWARD WHITE NICHOLSON, Ph.D., Professor of Economics. B.A., Oberlin College, 1942; A.M., Harvard University, 1948; Ph.D., 1950. (1958-)
- THEODORE NICOL, Ph.D., Associate Professor of Romance Languages. A.B., Clark University, 1926; A.M., Harvard University, 1928; Ph.D., 1933. (1946-)
- NORMAN NOBLE, Ph.D., Assistant Professor of Mathematics. B.A., Reed College, 1963; M.A., University of Rochester, 1966; Ph.D., 1967. (1966-)
- RUDOLPH FINK NUNNEMACHER, Ph.D., Professor of Zoology. B.S., Kenyon College, 1934; A.M., Harvard University, 1935; Ph.D., 1938. (1939-)
- DAVID OHANIAN, B.M., Assistant Professor (affiliate) of French Horn. B.M., New England Conservatory of Music, 1967. (1968-)
- PHILIP GILBERT OLSON, Ph.D., Associate Professor of Sociology. A.B., University of Arizona, 1954; A.M., 1956; Ph.D., Purdue University, 1959. (1961-)
- J. RICHARD PEET, M.A., Assistant Professor of Geography. B.S., University of London, 1961; M.A., University of British Columbia, 1963. (1967-)
- VICTOR H. PENTLARGE, M.D., Consultant to the Psychological Services Center. B.A., Harvard University, 1949; M.D., Harvard Medical School, 1953. (1958-)
- FERNAND G. PERON, Ph.D., Associate Professor (affiliate) of Biochemistry, Director of Steroid Training Program. B.Sc., Sir George Williams University, 1946; M.Sc., McGill University, 1950; Ph.D., 1953. (1967-)
- SPENCER R. POTTER, Ed.D., Assistant Professor in Education. B.S., Massachusetts State College, 1942; M.A. in Ed., Clark University, 1959; Ed.D., 1968. (1968-)
- JAMES F. POWERS, Ph.D., Lecturer in Medieval History. B.A., University of Virginia, 1951; M.A., 1961; Ph.D., 1966. (1967-)
- ELINOR PREBLE, B.M., Assistant Professor (affiliate) of Flute. B.M., New England Conservatory of Music, 1960. (1968-)
- FRANK W. PUFFER, Ph.D., Associate Professor of Economics. B.S., Brown University, 1960; Ph.D., 1965. (1968-)
- LARISA SOROKIN, M.A., Assistant Professor of Russian. B.A., University of California, Los Angeles, 1961; M.A., 1962. (1964-)
- RICHARD RABLEN, Ph.D., Associate Professor (affiliate) of Psychology. B.A., Depauw University, 1952; M.A., University of Wisconsin, 1955; Ph.D., 1958. (1966-)
- RELLY RAFFMAN, A.M., Professor of Music. A.B., Dartmouth College, 1943; A.M., Columbia University, 1949. (1954-)
- NEIL RANKIN, Ph.D., Assistant Professor of Psychology. B.E.E., Cornell, 1963; Ph.D., University of California at Berkeley, 1968. (1968-)
- KNUD RASMUSSEN, Ph.D., Associate Professor of Government. B.A., Copenhagen University, 1953; M.A., Cornell University, 1960; Ph.D., Rutgers University, 1964. (1966-)
- J. RICHARD REID, Ph.D., Professor of Romance Languages. A.B., Swarthmore College, 1935; A.M., Harvard University, 1936; Ph.D., 1943. (1944-)

- OSCAR RESNICK, Ph.D., Lecturer in Psychology. A.B., Clark University, 1944; M.A., Harvard University, 1945; Ph.D., Boston University, 1955. (1966-)
- JOHN THEODORE REYNOLDS, Ph.D., Associate Professor of Microbiology. B.S., Boston College, 1951; M.S., University of Massachusetts, 1954; Ph.D., 1962. (1956-)
- HARRIS ROSENKRANTZ, Ph.D., Professor (affiliate) of Biochemistry. A.B., Brooklyn College, 1943; M.S., New York University, 1946; M.S., Cornell Medical College, 1948; Ph.D., Tufts Medical School, 1952. (1959-)
- GWYN ROWLEY, Ph.D. Visiting Lecturer of Geography. B.A., University College of Wales, 1961; Ph.D., 1967. (1968-)
- ZALMAN RUBINSTEIN, Ph.D., Associate Professor of Mathematics, M.S., University of Jerusalem, 1958; Ph.D., University of Maryland, 1962. (1964-)
- SEBASTIANO SANTOSTEFANO, Ph.D., Associate Professor of Psychology. B.S., University of Connecticut, 1953; M.S., Pennsylvania State University, 1954; Ph.D., 1957. (1964-68)
- ALBERT J. SARGENT, M.A., Lecturer in Economics. B.S., Northeastern University, 1960; M.B.A., Clark University, 1962; M.A., 1967. (1965-)
- DAVID W. SAVAGE, Ph.D., Assistant Professor of English History. A.B., Denison University, 1959; M.A., Princeton University, 1961; Ph.D., 1963. (1967-)
- DONALD T. SAVAGE, Ph.D., Assistant Professor of Economics. B.B.A., University of Massachusetts, 1960; M.S., University of Wisconsin, 1961; Ph.D., 1967. (1964-)
- MARCIA A. SAVAGE, Ed.D., Assistant Professor of Education, Associate Dean of Students. A.B., Clark University, 1961; M.A., 1962; Ed.D., 1966. (1964-)
- WALTER SCHATZBERG, Ph.D., Assistant Professor of German. B.A., St. John's College, Maryland, 1954; M.A., Johns Hopkins University, 1957; Ph.D., 1966. (1966-)
- NEIL ROLF SCHROEDER, Ph.D., Associate Professor of English. A.B., Brown University, 1952; Ph.D., Yale University, 1962. (1960-)
- WILLIAM S. SHIVER, Ph.D., Associate Professor of Romance Languages. A.B., Xavier University of Louisiana, 1942; M.A., Columbia University, 1953; Ph.D., 1965. (1966-)
- MALCOLM SILLS, M.D., Psychiatry Consultant to the Psychological Services Center. B.S., Middlesex University, 1942; M.D., Middlesex Medical School, 1945. (1961-)
- HERBERT SILVERMAN, Ph.D., Assistant Professor of Mathematics. A.B., Temple University, 1963; M.A., Syracuse, 1965; Ph.D., 1968. (1968-)
- JOSEPH A. SINNOTT, M.S., Lecturer in Geology. B.S., Worcester State College, 1955; M.S., Boston University, 1957. (1966-)
- RODMAN ELDRIDGE SNEAD, Ph.D., Associate Professor of Geography. B.A., University of Virginia, 1953; A.M., Syracuse University, 1955; Ph.D., Louisiana State University, 1963. (1961-68)
- ROBERT JOHN STAIRS, B.S., Assistant in Physical Education. B.S., University of Rhode Island, 1956. (1959-)
- DAVID STEA, Ph.D. Assistant Professor of Geography and Psychology. B.S., Carnegie Institute of Technology, 1957; M.S., University of New Mexico, 1961; Ph.D., Stanford University, 1964. (1967-)
- STEWART A. STEHLIN, Ph.D., Assistant Professor of European History. B.A., Rutgers University, 1958; M.A., Yale University, 1959; Ph.D., 1965. (1966-)
- DONALD G. STEIN, Ph.D., Assistant Professor of Psychology. B.A., Michigan State University, 1960; B.S., Michigan State University, 1962; Ph.D., University of Oregon, 1965. (1966-)
- DAVID A. STEVENS, Ph.D., Assistant Professor of Psychology. A.B., University of California, 1954; M.A., University of Oregon, 1963; Ph.D., 1965. (1965-)

- JOHN SUNAPEE STUBBE, Ph.D., Associate Professor of Mathematics. B.S., University of New Hampshire, 1941; M.S., Brown University, 1942; Ph.D., University of Cincinnati, 1945. (1949-)
- SANG C. SUH, Ph.D., Assistant Professor of Economics. B.A., Clark University, 1958; M.A., 1959; Ph.D., Harvard University, 1967. (1964-)
- STANLEY SULTAN, Ph.D., Professor of English. A.B., Cornell University, 1949; A.M., Boston University, 1950; Ph.D., Yale University, 1955. (1959-)
- ERIKA ELISABETH THEOBALD, Ph.D., Assistant Professor of German. Ph.D., University of Vienna, 1948. (1964-68)
- WILLIAM E. TOPKIN, Ed.D., Assistant Professor of Education, Associate Dean of Students. A.B., Clark University, 1960; M.A., 1963; Ed.D., 1967. (1964-)
- RAYMOND TOUBMAN, M.A., Assistant Professor (affiliate) of Oboe. B.M., Boston University; M.A. (1968-)
- EDWARD N. TRACHTENBERG, Ph.D., Associate Professor of Chemistry. A.B., New York University; A.M., Harvard University, 1951; Ph.D., 1953. (1958-)
- KENNETH W. TERHUNE, Ph.D., Associate Professor of Psychology. B.M.E., Clarkson College of Technology, 1954; M.A.E., Chrysler Institute of Engineering, 1956; M.A., Michigan State University, 1961; Ph.D., 1963. (1968-)
- INA C. UZGIRIS, Ph.D., Assistant Professor of Psychology. B.S., University of Illinois, 1957; M.A., 1960; Ph.D., 1962. (1966-)
- ROGER CARLETON VAN TASSEL, Ph.D., Professor of Economics. A.B., Union College, 1947; A.M., Cornell University, 1950; Ph.D., Brown University, 1956. (1954-)
- HELEN G. VASSALLO, Ph.D., Lecturer in Zoology. B.S., Tufts University, 1953; M.S., 1955; Ph.D., Clark University, 1967. (1967-)
- WILLIAM VOGEL, Ph.D., Associate Professor (affiliate) of Psychology. B.A., Wesleyan University, 1955; M.A., Clark University, 1957; Ph.D., 1959. (1964-)
- JACQUES VONÉCHE, Ph.D., Assistant Professor of Psychology. A.B., L'Institut Supérieur; M.A., University of Louvain (Belgium), Institute of Psychology, 1960; Ph.D. University Louvain, 1966. (1968-)
- SEYMOUR WAPNER, Ph.D., G. Stanley Hall Professor of Genetic Psychology. A.B., New York University, 1939; A.M., University of Michigan, 1940; Ph.D., 1943. (1948-)
- HENRY JOHN WARMAN, Ph.D., Professor of Geography. B.S. in Ed., Bloomsburg State Teachers College, 1932; Ed.M., Temple University, 1938; Ph.D., Clark University, 1945. (1943-)
- WEN-YANG WEN, Ph.D., Associate Professor of Chemistry. B.S., National Taiwan University, 1953; Ph.D., University of Pittsburgh, 1958. (1962-)
- JANET MAE WESSON, M.A., Instructor in Romance Languages. A.B., Rivier College, 1965; M.A., Clark University, 1967. (1967-68)
- JEFFERSON A. WHITE, Ph.D., Associate Professor of Philosophy. B.A., Baylor University, 1952; B.D., Yale University, 1957; A.M., Yale University, 1960; Ph.D., 1964. (1961-)
- MORTON WIENER, Ph.D., Professor of Psychology. B.S., College of the City of New York, 1949; M.S., 1950; Ph.D., University of Rochester, 1953. (1957-)
- CLODIUS WILLIS, M.A.T., Assistant Professor of Romance Languages. A.B., Amherst College, 1959; M.A.T., Harvard University, 1963. (1968-)
- JOACHIM F. WOHLWILL, Ph.D., Professor of Psychology. A.B., Harvard College, 1949; Ph.D., University of California, 1957. (1958-)

- PETER H. WOLFF, M.D., Lecturer in Psychology. M.D., University of Chicago, 1950. (1961-)
- WALTER E. WRIGHT, M.A., Assistant Professor of Philosophy. B.A., Yale University, 1965; M.A., Vanderbilt University, 1967. (1968-)
- WILLIAM WRZESIAN, M.M., Assistant Professor (affiliate) of Clarinet. B.M., New England Conservatory of Music; M.M. (1968-)
- ALLEN M. ZWICKEL, Ph.D., Associate Professor of Chemistry. A.B., Cornell University, 1956; Ph.D., University of Chicago, 1959. (1961-)

Research Associates, 1967-68

- A. HARVEY BAKER, Ph.D., Department of Psychology. B.A., Harvard University, 1958; M.A., 1959; Ph.D., Clark University, 1968.
- LEONARD CIRILLO, Department of Psychology. B.A., The City College of New York, 1958; M.A., Clark University, 1962; Ph.D., Clark University, 1965.
- DAVID A. F. MARSHALL, Department of Biology. B.A., University of Nevada, 1959; M.S., University of Washington, 1961; Ph.D., Duke University, 1965.
- KOICHIRO MIYAJIMA, Ph.D., Department of Chemistry. B.S., Kyoto, 1958; M.S., 1960; Ph.D., 1964.
- GEORGE RAND, Department of Psychology. B.A., The City College of New York, 1959; M.A., Clark University, 1961, Ph.D., Clark University, 1965.
- THOMAS L. ROBERTS, Ph.D., Department of Biology. A.B., Talladega College, 1957; M.S., Trinity University, (San Antonio, Texas), 1961; Ph.D., Clark University, 1965.
- DESH RAJ SACHDEV, Department of Chemistry. B.Sc., Agra University, 1952; M.Sc., Kucknow University, 1954; Ph.D., McGill University, 1966.
- KESHAV NARAIN SHRIVASTAVA, Department of Physics. B.Sc., Agra University, 1961; M.Sc., University of Allahabad, 1963; Ph.D., Indian Institute of Technology, 1966.
- RODREIQUE M. SUTHERLAND, Ph.D., Department of Biology. B.S., Providence College, 1940; M.A.T., Brown University, 1961; Ph.D., Clark University, 1967.

Academic Boards and Committees, 1967-68

The President is an *ex officio* member of all boards and committees.

PRESIDENT'S CABINET:	Jackson, <i>chairman</i> , Campbell, <i>secretary</i> , Baker, S. Cohen, Haas, Hyde, Lee and Riorden.
PERSONNEL AND ORGANIZATION:	Jackson, <i>chairman</i> , Raffman, <i>secretary</i> , R. Anderson, Ahmadjian, Campbell, Carter, S. Cohen, Crockett and S. Hayden.
ADMINISTRATIVE:	Campbell, <i>chairman</i> , Baker, Corcoran, Goldberg, Haas, Holran, O'Donoghue, Pierson, Riorden, M. Savage and Topkin.
GRADUATE BOARD:	Jackson, <i>chairman</i> , Ahmadjian, R. Anderson, Carter, Coffee, M. Cohen, S. Cohen, S. Hayden, S. S. Hayden, Jones, Kegeles, R. Kohin, Melder, R. Murphy, Olson, Reynolds, Rubinstein, Van Tassel, Wapner, Weiner and Zwickel.
CREDENTIALS:	S. Cohen, <i>chairman</i> , Ahmadjian, R. Anderson, Coffee, S. Hayden, S. S. Hayden, Van Tassel, Wapner and Zwickel.
ACADEMIC COUNCIL:	Campbell, <i>chairman</i> , Chafitz, M. Cohen, Crockett, Cunningham, Davies, Feldman, Reynolds and Shiver.
COLLEGE BOARD:	Campbell, <i>chairman</i> , Baker, Barbera, Corcoran, Erickson, Rasmussen, M. Savage, Stevens and Topkin.
ADMISSIONS:	Pierson, <i>chairman</i> , Baker, Borg, Bowden, Bristol, Campbell, Curtis, Hilsinger, Kennison, Kidd, Poor, D. Savage, M. Savage and Topkin.
ATHLETICS:	Stubbe, <i>chairman</i> , Ahmadjian, Baker, Granger, Grob and Raffman.
SCHOLARSHIPS:	S. S. Hayden, <i>chairman</i> , Baker, Barron, Campbell, Pierson and Van Tassel.
EVENING COLLEGE BOARD:	Dolphin, <i>chairman</i> , Balko, S. Cohen, Edwards, Grob, Hilsinger, Krus, Murphy and White.
LIBRARY:	Cowardin, <i>chairman</i> , Ahmadjian and Grob.
RESEARCH COUNCIL:	Beard, S. Cohen, Grob, Kaplan, R. Kohin, Olson, Zwickel and Lee (<i>ex officio</i>), <i>chairman</i> .
AD HOC PLANNING COMMITTEE:	Crockett, <i>chairman</i> , Ahmadjian, Anderson, Campbell, Carter, S. Cohen, Grob, S. Hayden, Lee, Raffman, Reid, Wapner, White and Zwickel.

Scholars and Fellows Appointed Under Clark University Funds

1967-68

Alumni Association Fellows

Luc De Wulf, Economics, B.S., Katholieke University, Louven, 1967.
 Jinque Rho, Biology, B.S., Seoul National University, 1961.
 F. Stephen Trimby, Economics, B.S., Assumption College, 1966.

George S. Barton Fellows

Stephen H. Baker, Education, A.B., Clark University, 1949; M.Ed., Worcester State College, 1952.
 George J. Breen, Education, B.A., Clark University, 1960; M.Ed., *ibid.*, 1961.
 Caroline A. Murphy, Economics, A.B., Regis College, 1960; M.A., Clark University, 1963.
 J. Rene Paul Tasse, Biology, A.B., Assumption College, 1956; M.A., Clark University, 1963.

Elnora W. Curtis Fellow

Warren E. Chase, Mathematics, B.S., Franklin & Marshall College, 1956; M.Sc., University of New Hampshire, 1962.

Eliza D. Dodge Fellow

William L. Drazen, Economics, B.A., Clark University, 1965; M.A., University of Pennsylvania, 1966.

Joseph F. Donnelly Fellows

Gerard W. Gawalt, History, B.A., Northeastern University, 1965.
 Douglas C. Hebb, History, B.A., Union College, 1949; M.A., University of California at Berkeley, 1950.
 John B. Hench, History, B.A., Lafayette College, 1965.
 Norman S. Jessop, Education, A.B., Boston University, 1959; M.Ed., Northeastern University, 1966.
 Ralph A. Lennon, Geography, B.A., University of Massachusetts, 1965.
 Henry R. McCutcheon, Geography, B.A., McMaster University, 1964; M.A., Clark University, 1966.
 J. Peter Monro, History, B.A., Wesleyan University, 1966; M.A., Lehigh University, 1967.
 Raymond A. Pepin, Economics, A.B., Providence College, 1966.

John White Field Scholar

Nancy M. Moran, Education, A.B., Mt. Holyoke College, 1948.

Austin S. Garver Scholars

John D. Afesi, History, B.A., Clark University, 1967.
 Stephen J. Goldberg, Biology, B.A., Antioch College, 1965.
 David H. Quist, Education, A.B., Clark University, 1965; M.A.Ed., *ibid.*, 1967.
 Felicissima C. E. Serafica, Psychology, B.A., University of Pennsylvania, 1952; M.S.Ed., *ibid.*, 1953; M.A., Temple University, 1955.

Graduate School Scholars and Fellows

Robin C. Downes, Psychology, B.S., New England College, 1961.
 Paul W. Kwan, Biology, B.S., University of Maryland, 1966.

George Frisbie Hoar Scholars

Judith C. Crockett, Geography, B.A., Clark University, 1967.
 Lawrence A. DeJohn, Education, B.A., Providence College, 1967.
 Charles Erar, Education, Baccalaureat, Sorbonne, 1944; M.A., Assumption College, 1962.
 Robert J. Jackson, Education, B.S. in B.A., Clark University, 1967.
 David E. St. John, Education, A.B., St. Anselms College, 1960; M.Ed., Boston University, 1964.
 James E. Watters, History, B.A., Florida Presbyterian College, 1967.

Charles H. Thurber Scholars and Fellows

M. Susan Burns, History, B.S.Ed., West Chester State College, 1966.
 John B. Chester, Physics, B.S.E.E., New Haven College, 1967.
 Richard G. Montgomery, Mathematics, B.A., San Francisco State College, 1960; M.A.T., Brown University, 1965.

Appointments From Other Funds, 1967-68*Higher Education Act 1965 Title V-C Fellows*

James P. Barbato, Geography, B.A., Assumption College, 1965; M.A.Ed., Clark University, 1966.
 William Z. Clark, Jr., Geography, B.A., Concord College, 1967.
 Robert P. Donnell, Geography, B.A., Boston University, 1967.
 George J. Glacey, Geography, B.A., Middlebury College, 1967.
 Alan P. Muir, Geography, B.A., Castleton State College, 1966.
 Merrie Stoddard Muir, Geography, A.B., Clark University, 1966.
 A. Keith Van Winkle, Geography, B.A., Middlebury College, 1964; University of Innsbruck, 1964-66.
 W. Davis Van Winkle, Geography, B.A., Middlebury College, 1963.

National Aeronautics and Space Administration

James A. Albright, Chemistry, B.S., State University of New York, 1966.
 D. Michael Deeley, Mathematics, A.B., Clark University, 1964.
 James J. Kaput, Mathematics, B.S., Worcester Polytechnic Institute, 1964; M.A., Clark University, 1966.
 Joseph A. Keenan, Chemistry, B.S., Spring Hill College, 1964.
 Gayle P. Orczyk, Biology, B.A., Keuka College, 1966.
 Douglas L. Schmucker, Biology, B.S., Kenyon College, 1965.
 Thomas J. Whall, Chemistry, A.B., St. Anselms College, 1964.
 John H. Young, Physics, B.A., Gettysburg College, 1962; M.Sc., University of New Hampshire, 1964.

National Defense Education Act Title IV Fellows

- James H. Brazeal, Sem. I, History, A.B., University of Missouri, 1967.
 David M. Goodman, History, B.A., Long Island University, 1967.
 James P. Hanlan, History, A.B., Holy Cross College, 1967.
 Stephen P. Hobart, Geography, B.A., Carroll College, 1966.
 John B. Jacobs, Jr., Geography, A.B., Clark University, 1967.
 John H. Long, History, B.A., Northeastern University, 1966.
 Elias Meymaris, Chemistry, B.S., Tufts University, 1959.
 Kenneth J. Moynihan, History, B.A., Holy Cross College, 1966.
 Nathaniel G. Mullener, Psychology, A.B., George Washington University, 1965.
 Lee E. Phillips, Geography, A.B., Dartmouth College, 1965.
 Richard O. Riess, Geography, B.A., University of Rochester, 1951; M.A., Columbia Teacher's College, 1955.
 Lewis D. Rosenthal, Geography, B.B.A., New York City College, 1943; Certificate, Westminster College, 1944; M.A., New School for Social Research, 1964.
 Ruth Thomassen Samson, Psychology, B.A., University of Nebraska, 1967.
 Stephen W. Slocumb, History, B.A., Northeastern University, 1966.
 Donald A. Smith, History, A.A., Dean Junior College, 1965; B.A., Clark University, 1967.
 Walter C. Swain, Geography, B.A., Beloit College, 1967.
 Barbara E. Vander Waart, Chemistry, B.A., Wheaton College, 1966.
 Rosemary Wise, Chemistry, B.A., University of Massachusetts, 1966.
 Denis Wood, Geography, B.A., Western Reserve University, 1967.

National Institute of Mental Health

- Anna-Lisa Barofsky, Biology, B.A., Drew University, 1962; M.S., Florida State University, 1967.
 Robert B. Brooks, Psychology, B.B.A., City College of New York, 1964; M.A., Clark University, 1966.
 Julie Rogers Gittins, Psychology, B.A., Bennington College, 1964; M.A., Clark University, 1966.
 Andrew R. Goldman, Psychology, B.A., Harvard College, 1963.
 Paulette Lebensfeld, Psychology, A.B., Queens College, 1960; M.A., New School for Social Research, 1962; M.A., Clark University, 1965.

National Science Foundation

- R. Bruce Cassel, Chemistry (Graduate Trainee), B.S., Dartmouth College, 1965.
 John B. Chester, Physics (Graduate Trainee), B.S.E.E., New Haven College, 1967.
 James B. Crawford, Psychology (Graduate Trainee), B.S., Georgia Institute of Technology, 1967.
 Theodore C. Crusberg, Chemistry (Graduate Trainee), B.A., University of Connecticut, 1963; M.S., Yale University, 1964.
 Ingrid D. Hansen, Geography (Graduate Trainee), B.A., Wellesley College, 1962.
 Bernard Howard, Mathematics (Science-Faculty Fellow), B.Sc., William & Mary College, 1951; M.A., Clark University 1966.
 Richard H. Jackson, Geography (Graduate Trainee), B.S., Brigham Young University, 1965; M.S., *ibid.*, 1966.
 James J. Kaput, Mathematics (Summer Fellow), B.S., Worcester Polytechnic Institute, 1964; M.A., Clark University, 1966.

- Carol Loughlin Mainville, Physics (Summer Fellow), B.S., Merrimack College, 1965.
 Richard Melito, Psychology (Graduate Trainee), B.E., City College of New York, 1964.
 Thomas E. Mitchell, Psychology (Graduate Fellow), A.B., Holy Cross College, 1966.
 Richard G. Montgomery, Mathematics (Graduate Trainee), B.A., San Francisco State College, 1960; M.A.T., Brown University, 1965.
 Marjorie Rosenman, Psychology (Sem. I, Graduate Fellow), B.S., Jackson College, 1965.
 Chester E. Smolski, Geography (Sem. I, Science-Faculty Fellow), B.S.Ed., Bridgewater State College; M.A., Clark University, 1953.
 Laura Deming Stevens, Mathematics (Graduate Trainee), B.S., Bates College, 1965.
 John L. Trepaney, Economics (Graduate Trainee), B.A., Northeastern University, 1967.

United States Steel Foundation

- Louise J. Rundstrom, Economics, A.B., Clark University, 1965.

Teaching Assistants, Teaching Assistant Scholars and Fellows, 1967-68

- Ackerman, Michael J., Biology, B.A., Hofstra University, 1966.
 Bernstein, Mrs. Sylvia, English, B.S. in General Studies, Clark University Evening College, 1966.
 Best, Robins W., English, B.A., University of Vermont, 1959.
 Carrazana, German P., Physics, B.S., California State Polytechnic College, 1967.
 Carrington, Phillippa, Mathematics, B.A., Connecticut College, 1966.
 Chandler, Mrs. Harriette, History, B.A., Wellesley College, 1959; M.A., Clark University, 1963.
 Clark, Elizabeth R., Mathematics, B.A., Bennington College, 1967.
 Clement, John F., English, B.A., Fitchburg State College, 1967.
 Crockett, Judith, Geography, B.A., Clark University, 1967.
 Dent, Borden, Geography, B.S., Towson State College, 1963; M.A., University of California at Berkeley, 1967.
 Downes, Robin C., Psychology, B.S., New England College, 1961.
 Eberling, Richenda, Education, B.A., Notre Dame College, Maryland, 1967.
 Erickson, Paul, Sociology, A.B., Clark University, 1966.
 Gawalt, Gerard W., History, B.A., Northeastern University, 1965.
 Gilbert, Steven J., Psychology, A.B., Boston University, 1966.
 Gittins, John S., Psychology, B.A., Trinity College, 1965.
 Griffen, Lorraine M., Biology, B.A., Anna Maria College, 1963.
 Hart, Sidney, History, B.A., Long Island University, 1964.
 Hench, John B., History, B.A., Lafayette College, 1965.
 Hutchinson, Eleanor C., Education, A.B., University of Maine, 1939.
 Jacobs, Jerome B., Biology, B.A., University of Vermont, 1965; M.S.cand., *ibid.*, 1967.
 Kennedy, William J., Biology, B.S., Siena College, 1966.
 Kim, Poongjag, Chemistry, B.Sc., Seoul National University, 1965.
 Kuzmack, Mrs. Linda Nathan, Sem. I, B.S., Syracuse University, 1967.
 Kwan, Paul W., Sem. II, Biology, B.S., University of Maryland, 1966.
 Lacey, Harel C., Chemistry, B.Sc., Pembroke College, 1967.
 LaForce, Lise M., Education, B.A., Rivier College, 1966.
 LaRusso, Gerald W., Biology, A.B., Holy Cross College, 1966.

- LeBlanc, Philip W., Sem. II, Sociology, B.A., Merrimack College, 1967.
- LeClair, Daniel P., Sociology, B.A., University of Rhode Island, 1966.
- Lin, Yn-hwang, Chemistry, B.Sc., National Taiwan University, 1967.
- Markle, Mrs. Marsha, Education, A.B., Hood College, 1965.
- Markstein, Judith, Chemistry, B.A., Queens College, 1967.
- Marshall, Gordon M., Jr., History, B.A., Whittier College, 1964.
- McBain, Neil H.J., History, B.A., University of British Columbia, 1964; M.A., Lehigh University, 1965.
- McGrath, Jill M., Education, B.A., College of Mt. St. Vincent, 1966.
- Meredith, Michael, Biology, B.Sc., University of Birmingham, 1963.
- Meymaris, Elias, Chemistry, B.S., Tufts University, 1959.
- Mooney, John F., Sem. II, Mathematics, B.A., Clark University, 1964.
- Murphy, Caroline A., Economics, A.B., Regis College, 1960; M.A., Clark University, 1963.
- O'Connor, Donald E., History, B.S., Buffalo State University College, 1964; M.A., Lehigh University, 1965.
- Pepin, Raymond A., Sem. II, Economics, A.B., Providence College, 1966.
- Perkins, Ronald I., Sociology, B.A., University of New Hampshire, 1963.
- Price, Robert D., Physics, B.S., Trinity College, 1967.
- Reif, Edward D., Psychology, B.A., Rutgers University, 1966.
- Rho, Jinnque, Biology, B.Sc., Seoul National University, 1961.
- Rosenthal, Mrs. Edith, Sociology, A.B., Barnard College, 1945.
- Rosloff, Barry N., Biology, A.B., Clark University, 1966.
- Sewall, Geoffrey B., English, B.A., University of the South, 1961.
- Smith, Robert J., History, B.S., Southern Connecticut State College, 1966; M.A., Clark University, 1967.
- Solonche, David J., Biology, A.B., Yeshiva College, 1966.
- Stefanini, Edward J., Mathematics, B.S., Worcester Polytechnic Institute, 1960.
- Stein, Mrs. Dona R., English, A.B., Clark University, 1960.
- Steinberg, Robert M., English, B.A., Pennsylvania State University, 1967.
- Stevens, Mrs. Laura D., Mathematics, B.S., Bates College, 1965.
- Swain, Walter C., Geography, B.A., Beloit College, 1967.
- Tanne, Joseph A., Mathematics, B.S., Providence College, 1967.
- Taylor, Dennis L., Psychology, B.A., Carleton University, 1967.
- Tremblay, William A., English, B.A., Clark University, 1962.
- Trimby, F. Stephen, Economics, B.S., Assumption College, 1966.
- Urisko, James A., Economics, B.A., Wilkes College, 1967.
- Valdes, Dario, Education, B.A., Atlantic Union College, 1964.
- Van Roy, Ralph F., Sociology, B.A., Hamilton College, 1966.
- Wang, Yu, Chemistry, B.S., National Taiwan University, 1966.
- Weber, Jonathan L., Physics, B.S., University of Rochester, 1966.
- Winer, Gerald A., Psychology, B.S., Trinity College, 1963; M.A., Clark University, 1966.
- Yu, Kam-ye, Chemistry, B.S., Chang Chi College, 1966.
- Zabek, Robert J., Mathematics, A.B., Stonehill College, 1966.
- Zepp, Warren B., Jr., Biology, B.Sc., Worcester Polytechnic Institute, 1967.

The Corporation

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Carl H. Haas, Assistant Treasurer	Worcester, Mass.

Life Members

Roland A. Erickson, A.M. (1951-)	Greenwich, Conn.
A.D. Ross Fraser, A.B., L.H.D. (1960-)	Rome, New York
Jacob Hiatt, A.M. (1955-)	Worcester, Mass.
Mrs. Milton P. Higgins (1962-)	Worcester, Mass.
John Jeppson, M.B.A., Sc.D. (1948-)	Worcester, Mass.
Richard W. Mirick, LL.B., (1957-)	Worcester, Mass.
Joseph C. Molder, M.B.A. (1954-)	Worcester, Mass.

Term Members

Frederic W. Howe, Jr., A.B. (1962-)	New Braintree, Mass.
Alden P. Johnson, A.B. (1962-)	Worcester, Mass.
Robert A. Miller, A.B., C.P.A. (1963-)	Shrewsbury, Mass.
Stephen T. Riley, Ph.D. (1963-)	Weston, Mass.
Constance E. Smith, Ph.D. (1963-)	Cambridge, Mass.
Elwyn C. Hale (1963-)	Piedmont, Calif.
Ben H. Bagdikian, A.B., L.H.D., Litt.D. (1964-)	Washington, D.C.
Fairman C. Cowan, LL.B. (1964-)	Worcester, Mass.
Mrs. Robert H. Goddard, A.M., Sc.D. (1964-)	Worcester, Mass.
Archie Greenberg, A.M. (1965-)	Miami Beach, Fla.
C. Waller Barrett, Litt.D., L.H.D. (1966-)	Charlottesville, Va.
Francis A. Harrington, A.B. (1966-)	Worcester, Mass.
David R. Porter, A.B. (1966-)	Wellesley, Mass.
Robert K. Massey, A.B. (1968-)	Holden, Mass.

Members Elected by the Alumni

Chester Bland, A.M. (1963-)	West Hartford, Conn.
John J. Singer, Jr., Ph.D. (1964-)	Hollis, N.H.
Shannon B. McCune, Ph.D., LL.D. (1965-)	Riverdale, N.Y.
Gustaf Coontz, A.B. (1966-)	Worcester, Mass.
Robert A. Nelson, Ph.D., Sc.D. (1967-)	McLean, Va.
John W. Kneller, Ph.D. (1968-)	Oberlin, Ohio

Emeriti

Howard M. Booth (1939-1965)	Worcester, Mass.
Francis H. Dewey, Jr., LL.B. (1934-1962)	Worcester, Mass.
Samuel H. Dolbear, Sc.D. (1940-1961)	New York, N.Y.

Committees of the Board of Trustees (1967-1968)

EXECUTIVE:	Higgins, <i>Chairman</i> ; Coontz, Cowan, Hiatt, Howe, Jeppson, Miller, and Mirick.
BUDGET AND FINANCE:	Molder, <i>Chairman</i> ; Miller, Mirick, and Porter.
ACADEMIC AFFAIRS:	Smith, <i>Chairman</i> ; Bland, <i>Vice Chairman</i> ; Bagdikian, Barrett, Behrman, Cowan, Goddard, Greenberg, Hale, Harrington, McCune, Molder, Nelson, Singer, *Campbell, and *Cohen.
NOMINATING:	Fraser, <i>Chairman</i> ; Bagdikian, Erickson, Higgins, Jeppson, Porter, Riley, Smith, and *Hyde.
PHYSICAL PLANT:	Hiatt, <i>Chairman</i> ; Higgins, <i>Vice Chairman</i> ; Behrman, Bland, Goddard, Harrington, Johnson, Riley, Singer, Nelson, *Baker, *Barron, *Billias, and *Riorden.
PLANNING AND DEVELOPMENT:	Cowan, <i>Chairman</i> ; Howe, <i>Vice Chairman</i> ; Coontz, Fraser, Hale, Hiatt, Jeppson, Johnson, Porter, *Hyde, *Gleason, and *Massey.
HONORARY DEGREES:	Bagdikian, <i>Chairman</i> ; Hale, <i>Vice Chairman</i> ; Greenberg, McCune, Riley, Smith, *Campbell, *Holran, *Kaplan, *Schroeder, and *Warman.
AUDITING:	Singer, <i>Chairman</i> ; Bland, and Howe.
LIBRARY PLANNING SUB-COMMITTEE	Higgins, <i>Chairman</i> ; Barrett, Behrman, Goddard, Howe, Johnson, Riley, *Ahmadjian, *Barron, *Billias, *Cowardin, *Grob, *Raffman, and *Riorden.
*NON-TRUSTEE MEMBERS:	President Frederick H. Jackson, Dr. Vernon Ahmadjian, Dr. Robert W. Baker, Tilton M. Barron, Dr. George A. Billias, Dr. Robert F. Campbell, Dr. Saul B. Cohen, Dr. Samuel P. Cowardin, III, Charles K. Gleason, Dr. Gerald N. Grob, Bruce G. Holran, Robert M. Hyde, Dr. Bernard Kaplan, Robert K. Massey, Rely Raffman, Shane E. Riorden, Dr. Neil R. Schroeder, and Dr. Henry J. Warman.

Academic and Administrative Officers

Frederick H. Jackson, Ph.D., *President*

Robert M. Hyde, A.M., *Executive Vice President*

Shane E. Riorden, LL.B., *Vice President for Business and Finance*

Saul B. Cohen, Ph.D., *Dean of the Graduate School*

Robert F. Campbell, Ph.D., *Dean of the College*

Robert W. Baker, Ph.D., *Dean of Students*

Arnold C. Bailey, A.B., *Director, Goddard Library Program*

Charlotte L. Ball, *Guidance Counselor*

Tilton M. Barron, B.L.S., *Librarian*

Roger Bibace, Ph.D., *Director, Psychological Services Center*

H. Phelps Bristol, A.B., *Assistant Director of Admissions*

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Kathleen A. Convery, *Purchasing Agent*

Gerard T. Corcoran, M.A. *Registrar*

Richard J. Courtney, B.S. in B.A., *Manager, University Bookstore*

Gladys E. Diliberto, *The College Secretary*

Thomas M. Dolan, M.A.Ed., *Director, The Clark Fund*

Thomas J. Dolphin, A.B., *Director, The Evening College and The Summer School*

John S. Downs, A.A., *Director, Food Services*

Charles K. Gleason, Ed.M., *Director of Development*

Robert E. Goodney, *Superintendent, Buildings and Grounds*

Carl H. Haas, *Controller*

Bruce G. Holran, A.B., *Director of Public Relations*

George M. Joseph, M.D., *Medical Director*

Robert M. Kidd, A.B., *Financial Aid Officer*

Arthur M. Kroll, Ed.D., *Director, Student Counseling Center*

Dwight E. Lee, Ph.D., *Coordinator of Research*

Richard A. Morrison, A.B., *Assistant Director of Public Relations*

Clark A. Perry, *Supervisor of Data Processing*

Richard W. Pierson, A.M., *Director of Admissions*

Gary S. Poor, M.Ed., *Associate Director of Admissions*

Spencer R. Potter, Ed.D., *Assistant Director of Guidance and Placement*

Marcia A. Savage, Ed.D., *Associate Dean of Students*

Marjorie K. Swindel, *Manager, Central Services*

William E. Topkin, Ed.D., *Associate Dean of Students*

James D. Van Houten, A.B., *Alumni Secretary*

Academic Calendar for 1968-69

1968

Friday, September 6	Freshman orientation begins.
Monday, September 9	First semester registration.
Tuesday, September 10	Classes begin.
Monday, October 28	Last day for receiving applications for admission to candidacy for the degree of Doctor of Philosophy in June, 1969. Mid-semester reports due at Registrar's Office at 9 a.m.
Wednesday, November 27	Beginning of Thanksgiving recess at close of classes.
Monday, December 2	Thanksgiving recess ends at 8:30 a.m.
Wednesday, December 18	Beginning of Christmas recess at close of classes.

1969

Thursday, January 2	End of Christmas recess at 8:30 a.m.
Thursday, January 2	No classes.
Friday, January 3	No classes.
Saturday, January 4	Semester examinations begin.
Saturday, January 11	Last day of examinations. Mid-year recess begins at 5 p.m.
Monday, January 20	January Study Period begins.
Monday, February 10	Second semester registration.
Tuesday, February 11	Classes begin.
Friday, February 14	Last day for receiving applications for admission to candidacy for the degree of Master of Arts and Master of Arts in Education in June, 1969.
Friday, March 28 ✓	Mid-semester reports due at Registrar's Office at 9 a.m.
Saturday, March 29	Beginning of spring recess at close of classes.
Monday, April 7	End of spring recess at 8:30 a.m.
Monday, May 12	Dissertations for the degrees of Doctor of Philosophy and Doctor of Education due at Registrar's office at 9 a.m.
Monday, May 19	Theses for degrees of Master of Arts and Master of Arts in Education due at Registrar's Office at 9 a.m.
Thursday, May 22	No classes.
Friday, May 23	No classes.
Saturday, May 24	Semester examinations begin.
Sunday, June 8	Commencement Day.

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DECEMBER

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1. ExTFP Seminar (History 201). A colloquium in new approaches to historiography and the teaching of history in secondary schools. The course focused on recent interpretations, new methodologies, especially in some of the newer social science disciplines. Examples included family history, use of autobiography in the study of history, urban analysis, economic history, and political history. The course also examined new curriculum materials, especially those coming from experimental programs such as the Carnegie curriculum in history, politics, anthropology;
2. ExTFP Seminar (Geography 201). This course was similar to the History seminar but focused primarily on new methodologies and new approaches to research and teaching in Geography. Focus was on the High School Geography as developed at the University of Colorado and disseminated through the American Association of Geographers. Students reviewed materials and approaches from the perspective of both the discipline of geography as well as its teaching.
3. History 305 Seminar in Curriculum development and teaching of the social sciences. This course was devoted specifically to curriculum development and teaching. It built on the review of the History and Geography Seminars (above) and provided authentic field tests settings for fellows to work with classroom teachers and to experiment with new curricular approaches. Stress was placed on combining recent scholarly knowledge with new curricular approaches.

RBF:gd



Clark University

Summer School

Worcester, Massachusetts

Intersession, Days, June 10–June 29

Intersession, Nights, June 10–July 5

Summer Session, Days, July 1–August 17

Summer Session, Nights, July 8–August 17

1968

CLARK UNIVERSITY BULLETIN

Number 301

April, 1968

The Clark University BULLETIN is published six times a year, in April, twice in July, twice in September and December. Second-class postage paid at Worcester, Massachusetts. Correspondence may be addressed to: The Summer School, Clark University, 950 Main Street, Worcester, Massachusetts 01610.

A Unique Opportunity to Learn

Small groups of students working in courses they enjoy typify the educational opportunity offered by the Clark University Summer School. Superior teaching and interested students combine to make for effective learning. Active participation by the students in class discussions is encouraged.

Courses are available in the arts and sciences at both the graduate and undergraduate level, permitting students to accelerate their work toward a degree. In addition, the selection of courses in the modern languages permits current and prospective graduate students to better prepare themselves for graduate study.

There is a variety of courses available for teachers who seek professional advancement. The selection of subject matter courses is excellent, and several education courses will be offered.

Evening classes in liberal arts and business will be offered for those who have part time summer jobs during the day and wish to gain academic credit at the same time, as well as for those who are continuing their studies in the Clark University Evening College.

Clark University has an excellent library employing the open shelf system with an opportunity for unlimited browsing of the large and varied collection of modern books, professional periodicals and an unusually large map collection.

Clark is ideally located for summer study. The summer climate is excellent and the University is near numerous cultural and recreational facilities. Trips to Tanglewood, to ball games in Boston, and swimming in the nearby ponds have been very popular. The fine tennis courts will be available for use by Summer Session students.

Degrees and Credits

All courses offered are accepted at Clark for credit toward the degree of Bachelor of Arts or the Evening College degrees of Bachelor of Science in General Studies, Bachelor of Science in Business Administration, Bachelor of Fine Arts or Master of Business Administration unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages and mathematics which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration. Course changes after the third day of classes must be approved by the Director.

One transcript of a student's Summer School record is available free of charge. Additional Summer Session transcripts should be requested at the Registrar's office, 18 Downing St. There is a \$1.00 fee for each additional transcript.

TUITION AND FEES

A matriculation fee of \$5.00 is required of all students entering Clark University for the first time. The tuition for each three semester hour course is \$120.00. Persons who wish to audit a course without receiving credit register and pay tuition at the stated rate. However, students taking two courses for credit during the Summer Session may audit a third course without additional cost. Tuition and fees must be paid in the Summer School Office immediately following registration. A fee for late registration of \$3.00 must be paid by students who fail to complete registration within the official Registration Period.

WITHDRAWALS AND REFUNDS

Requests for withdrawal must be made in *writing* and will become effective upon receipt in the Summer School Office. *Discontinuance of attendance*

or notice to the instructor does not constitute withdrawal. Partial refunds of full tuition will be made only under these circumstances and in accordance with the following schedule:

Intersession—Days and Nights

June 10, 11	full refund
June 13, 14	two-thirds
June 15	one-third

Summer Session—Days

July 1, 2	full refund
July 3, 5	two-thirds
July 8	one-third

Summer Session—Nights

July 8, 9	full refund
July 10, 11	two-thirds
July 12	one-third

LIVING FACILITIES AND COSTS

Rooms will be available for both men and women in the new University dormitories but reservations should be made promptly on or before June 1. Room rent is \$14.00 (including laundry) per week for single room occupancy and \$11.50 (including laundry) for double. A non-refundable deposit of \$10.00 is required in advance to hold a room. In addition there is a \$1.00 refundable key deposit.

FOOD SERVICE INFORMATION

Clark University will offer breakfast, lunch and supper in the Snack-Bar, Jefferson Hall, Monday through Friday, 7:30 a.m. to 6:30 p.m. Meal tickets may be purchased on a weekly basis covering 15 meals for a price of \$19.00. Meal tickets will entitle you to seconds on any meal. A la carte service will be available during the same hours. The Snack-Bar will be open June 10 through August 17.

MAIL SERVICE

Student mail will be distributed through individual boxes in the Central Services Office located in Estabrook Hall. A \$1.00 refundable key deposit is required.

LIBRARY HOURS

The library at Clark University will be open Monday through Thursday, 9:00 a.m. to 8:00 p.m., and Friday, 9:00 a.m. to 5:00 p.m.

VETERANS

Veterans attending the 1968 Summer School should designate by writing *Veteran* in the left hand corner of the registration card.

Veterans who are non-Clark students are reminded that Certificates of Eligibility held during the Spring Semester 1968 do not apply to the Summer School and that a new application must be completed for the course of summer study.

ADMINISTRATIVE OFFICERS OF THE UNIVERSITY

Frederick H. Jackson, *President*

Robert M. Hyde, *Executive Vice President*

Robert F. Campbell, *Dean of the College*

Thomas J. Dolphin, *Director of the Summer School*

Special Programs

NDEA SUMMER INSTITUTE IN GEOGRAPHY

Clark University, in cooperation with the United States Office of Education, will conduct a Summer Institute in Cultural Geography for Puerto Rican Teachers and Others. The Institute, authorized and financed under Title XI, National Defense Education Act as Amended, 1964, will be held in Puerto Rico and will open on May 27, 1968 and continue until July 5, 1968.

For further information address all inquiries to:

Dr. Berl Golomb, Co-director
NDEA Summer Institute
Clark University
School of Geography
Worcester, Massachusetts 01610

Clark University, in cooperation with the United States Office of Education, will conduct a Summer Institute in Geography and Social Science for Teachers of American Dependents in South America. The Institute, authorized and financed under Title XI, National Defense Education Act as Amended, 1964, will be held in Brazil and will open on July 8, 1968 and continue until August 9, 1968.

For further information address all inquiries to:

Dr. Berl Golomb, Co-director
NDEA Summer Institute
Clark University
School of Geography
Worcester, Massachusetts 01610

NDEA SUMMER INSTITUTE IN AMERICAN HISTORY

Clark University, in cooperation with the United States Office of Education, will conduct a Summer Institute in American History for forty-five secondary school teachers (grades 9-12). The Institute, authorized and financed under Title XI, National Defense Education Act as Amended, 1964, will open on July 1, 1968 and continue until August 17, 1968. The deadline for completed applications is March 17, 1968.

This Institute will have a dual objective. In the first place, it will aim to provide inservice teachers, grades 9-12, with a knowledge of recent

interpretations in American history from the colonial period to the present. Secondly, a large block of time will be spent in studying contributions that other disciplines—notably political science—have made to a broad understanding of American society.

Instead of providing participants with several separate and distinct courses, the Institute will be organized around a common integrated theme; namely, the nature of American society in different eras. Three chronological periods will be studied: from the first settlements to 1828, from 1828 to 1877, and the period since 1877. In each of these three periods students will be made aware of how scholars within the last fifteen or twenty years have delineated its basic characteristics, what the major interpretive problems are, and whether it is possible to resolve different viewpoints.

THE AMERICAN LEADERSHIP STUDY GROUPS

The Clark University Summer School, in cooperation with the A.L.S.G., offers each summer a program of overseas study and travel. Academically, the program is concerned with the history and cultural foundations of Western Europe. It is five weeks in length (July 5–August 8) and includes week-long study periods at the universities of London, Rome, and Paris.

Participation in the A.L.S.G. summer program is made available to suitably qualified high school upperclassmen and college students throughout the United States. The selection of members and alternates is based on scholarship, character, and in general on an ability to assimilate and profit from the program offered. (Non-credit.)

EDUCATIONAL AND ECONOMIC DEVELOPMENT IN AFRICA

ECON.—S.142, 342

EDUC.—S.142, 342

GEOG.—S.142, 342

F. Eugene Melder, Ph.D., *Professor of Economics*

A four week study trip to include five of the following “emerging” African countries (Ethiopia, Kenya, Malawi, Tanzania, Zambia, and South Africa) will provide the sites of study. Conducted visits to development projects and educational institutions, with reading and lectures on the scene, will focus on education, geography, manpower training and economic development problems. Opportunity will be afforded to visit points of tourist interest, such as the archaeological site of Axum (ancient capital of Sheba), the monolithic churches of Lalibela, tribal areas, and a camera safari to a national game park in Kenya or Tanzania.

The comprehensive course cost is \$1795, including tuition, round trip air fare, excluding passport, visa and inoculation fees, and sightseeing stopovers in Europe. The trip south of Ethiopia will be in the cool or “winter” season, providing generally

comfortable temperatures. Applications accompanied by a deposit of \$300 must be made by May 15. Jerusalem is an optional extra. Group limit 15 persons including auditors, and registrants for undergraduate or graduate credit.

Departure from Boston July 2, 1968 and return to Boston August 12, 1968.

STUDY-TRAVEL COURSE IN WESTERN EUROPE

The Summer School will offer a five-week study-travel course in Western Europe this summer from July 5 to August 8.

The major objective is to introduce the participants to the language, customs, culture, and institutions of Western Europe, with an emphasis on Spain and France. The course will combine an optional elementary course in French or Spanish with a tour of England, France, and Spain. (3 semester hours credit.) Complete cost \$750.

For more information address all inquiries to:

Dr. Richard J. Gordon
Department of Education
Clark University
Worcester, Massachusetts 01610

Course Offerings

Summer, 1968

Interession

BIOLOGY

FIELD ECOLOGY

BIO.—S.17

William A. Hutchinson, M.A., *Associate Professor of Biology*
Holyoke Community College

An introductory study of the distribution of plants and animals, their interrelationships and adaptations to such a wide variety of environment as encompassed from the seashore to the uplands of western Massachusetts. Many all-day field trips will bring the student to the outdoor laboratory. A previous course in biology is required. *Limited to 16 students.*

Monday through Friday, 9:00 a.m. and 2:00 p.m.

BUSINESS ADMINISTRATION

BUSINESS LAW

B.A.—S.20a, b

Reginald J. Smith, M.Ed., *Associate Professor of Law and Accounting*,
Holy Cross College

A study of the legal basis of business and the principles of statutory and common law as they affect business relationships; covering such subjects as contracts, agency, property, sales, partnerships, corporations, and negotiable instruments. (This course may not be counted toward the A.B. degree.)

Interession: Monday, Wednesday and Friday, 6:00–9:00 p.m.
Summer Session: Tuesday and Thursday, 6:00–9:00 p.m.

PRINCIPLES OF ACCOUNTING

B.A.—S.117a, b

Frederick R. Stobel, M.B.A., *Instructor, Holy Cross College*

First semester: The fundamental accounting equation, the operating cycle, accruals and adjustments, preparation and analysis of statements of various forms of business organization. *Second semester:* Accounting for and analysis of major areas utilized in making management decisions including cash and investments, assets, liabilities, manufacturing operations, cost, ratio analysis, budgeting.

Interession: Monday, Wednesday and Friday, 6:00–9:00 p.m.
Summer Session: Tuesday and Thursday, 6:00–9:00 p.m.

ECONOMICS

PRINCIPLES OF ECONOMICS

EC.—S.11a, b

Constantine Michalopoulos, Ph.D., *Assistant Professor of Economics*

An introduction to the fundamental economic principles, together with a study of the practical application of these principles to the problems of American life.

Interession: Monday, Wednesday and Friday, 6:00–9:00 p.m.

Summer Session: Monday, Wednesday and Friday, 8:00–10:00 p.m.

MONEY AND BANKING

EC.—S.113

Donald T. Savage, Ph.D., *Assistant Professor of Economics*

The principles of money and banking; characteristics of the American monetary and banking system; theoretical relations of money, prices, income.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

EDUCATION

METHODS AND MATERIALS IN SECONDARY EDUCATION ED.—S.208

Richard Gordon, Ph.D., *Assistant Professor of Education*

Methods and techniques used by the teacher in junior and senior high school. Emphasis will also be upon survey of materials available.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

ENGLISH

INTRODUCTION TO LITERATURE

ENG.—S.10

Robert A. Barakat, Ph.D., *Assistant Professor of English*

This course will be taught in sections. All the sections will deal with the problems common to all the literary genres—such as the handling of diction, imagery, point of view, tone, and structure; but the reading assignments will vary, each section focusing on some concept or theme. Students will be permitted to make their own choices as far as possible.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

ENGLISH COMPOSITION AND LITERATURE

ENG.—S.11a, b

John McLaughlin, M.A., *Lecturer*

Through the study of essays on the history and nature of the English language, the first semester will introduce the student to the techniques of rhetoric, logic, and semantics that contribute to the writing of effective expository prose. The second semester, an introduction to literature, will be devoted to the reading and analysis of literary types—the short story, the novel, the drama, and poetry.

Interession: Monday, Wednesday and Friday, 6:00–9:00 p.m.

Summer Session: Tuesday and Thursday, 6:00–9:00 p.m.

PUBLIC SPEAKING

ENG.—S.12

Arthur A. Kennedy, M.A., *Professor of English, Worcester Polytechnic Institute*

A course in the fundamentals of Public Speaking including the more common speech situations such as presentation of information and persuasive speaking; voice tests and vocabulary drill. (Enrollment limited to 20.)

Monday, Wednesday and Friday, 6:00–9:00 p.m.

MODERN CONTINENTAL DRAMA

ENG.—S.155

Neil R. Schroeder, Ph.D., *Associate Professor of English*

A survey of the drama of continental Europe, excluding England, from Ibsen to the drama of the absurd. Special emphasis will be given to the major figures, including Ibsen, Strindberg, Chekhov, Pirandello and Brecht. Prerequisite: ENG.—S.11a and b.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

DIRECTED STUDY IN YEATS AND JOYCE

ENG.—S.200

Stanley Sultan, Ph.D., *Associate Professor of English*

This course is designed for advanced undergraduates and graduate students, and participation is by consent of the instructor (which may be secured by letter). After a series of meetings of the whole class, each student will develop and delineate a project, dealing with either figure or both, to culminate in a paper of five thousand to ten thousand words (twenty to forty pages). Each student will confer with the instructor or submit a progress report weekly, until at the end of the seventh week a series of seminars will be held at which students will present orally the results of their studies. The papers will be due at the end of the ninth week, and the instructor will discuss each paper with its author in a subsequent conference.

Calendar for Directed Study in Yeats and Joyce

June 10 and 11, 10:00 a.m.—12:00 noon, 2:00–4:00 p.m.: background, bibliography, research information (compulsory)

June 24, July 1, 8, 15, 22: conferences or progress reports

July 25 and 26, 10:00 a.m.—12:00 noon, 2:00–4:00 p.m.: final seminars (appropriate sessions compulsory)

August 9, 4:00 p.m.: papers due

SHAKESPEARE

ENG.—S.213

Karl O. E. Anderson, Ph.D., *Professor of English*

A study of nine major plays (comedies, histories, and tragedies), aimed to bring out the development of Shakespeare as a dramatist and to trace the changes in his attitude towards life. The plays to be read are *Romeo and Juliet*, *As You Like It*, *Richard II*, *Henry IV, Part I*, *Julius Caesar*, *Hamlet*, *Lear*, *Othello*, and *Macbeth*. Prerequisite: ENG.—S.11a and b.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

FINE ARTS

INTRODUCTION TO THE HUMANITIES

F.A.—S.10

Paul C. Deane, Ph.D., *Associate Professor of English, Bentley College*

An introduction to the various arts and their relation to the ideas that produce them. After a consideration of the nature and function of art, the course will discuss briefly the basic methods of the several arts: painting, sculpture, music, literature, architecture, motion picture. Consideration of the most important art movements, such as classicism, romanticism, abstraction. A limited number of works will be studied in detail for their revelation of these principles and for their intrinsic value as commentaries on the human condition. *Limited to 25 students.*

Monday, Wednesday and Friday, 6:00–9:00 p.m.

ART STUDIO WORKSHOP

F.A.—S.100

John T. Murphey, B.S., *Assistant Professor of Fine Arts*

An art involvement course designed for those with little or no experience in art production in which the student will experiment in class in a variety of mediums and approaches to increase his understanding as well as his ability in the visual arts. Projects will include representational drawing, still life painting, statements in meaning, abstract painting, action-painting, collage, clay sculpture, constructions, “found-objects,” environments, and happenings. Grade rests on effort and understanding. There will be an additional fee for materials of about \$25.00 payable at the first meeting. Enrollment limited to 10 students.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

INTRODUCTION TO MUSIC

F.A.—S.102

Wesley M. Fuller, M.Mu., *Associate Professor of Music*

What to listen for in Music. Designed for the student with no previous musical training or experience, it will deal with the basic theoretical elements and materials of music.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

MASTERPIECES OF ORIENTAL ART

F.A.—S.190

Samuel P. Cowardin, III, Ph.D., *Associate Professor of Fine Arts*

An examination of selected works of Indian, Chinese, and Japanese art in the light of their cultural backgrounds, with emphasis on original material in the museums of Boston, Cambridge, and Worcester. The principal aim of the course is to promote a sympathy for art forms which may initially seem strange to Western eyes by pointing up the different aims of Eastern and Western artists and by delving into basic questions of style and iconography. Class discussions, readings, museum visits, and a paper. May not be counted in addition to Fine Arts 19a or 19b.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

GEOLOGY**PHYSICAL GEOLOGY**

GEOL.—S.12a

Wesley E. Bryers, Ph.D., *Associate Professor of Geology*

Introduction to geology, origin of the earth, its development through time; the study of the common minerals and rocks, their structure, origin and occurrence; geological activities of the air, streams, and the sea; nature of glaciers, volcanoes and earthquakes, and the age of the earth. Laboratory work consists of mineral and rock identification.

Section I, Monday through Friday, 9:00 a.m. and 2:00 p.m.

Section II, Monday, Wednesday and Friday, 6:00–9:00 p.m.

GOVERNMENT**AMERICAN GOVERNMENT**

GOV.—S.15

John A. Worsley, M.A., *Assistant Professor of History,*
Worcester Polytechnic Institute

A discussion of the basic principles and structure of American Government with emphasis upon the politics of government, including the process of policy formation and decision making.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

HISTORY**THE SOVIET SYSTEM**

HIST.—S.282

John O. Iatrides, Ph.D., *Chairman of Dept. of Political Science,*
Southern Connecticut State College

The course examines the political, economic and social development of Russia since the Bolshevik Revolution. After a brief historical survey of twentieth century Russia the ideology, institutions and foreign policies of the Soviet system will be examined.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

MATHEMATICS**FUNDAMENTALS OF MATHEMATICS**

MATH.—S.11a, b

Robert J. Perry, M.A., *Lecturer*

A logical development of elementary mathematics: including an axiomatic treatment of the real number system, arithmetic and elementary algebra, functions and relations, polynomials and topics from the theory of equations, introductory analytic geometry, and the exponential, logarithmic, and trigonometric functions. As a background, the arithmetic and algebra over arbitrary sets will first be considered.

Intersession: Monday, Wednesday and Friday, 6:00–9:00 p.m.

Summer Session: Monday, Wednesday and Friday, 6:00–8:00 p.m.

PSYCHOLOGY**GENERAL PSYCHOLOGY**

PSY.—S.11a

Donald G. Stein, Ph.D., *Assistant Professor of Psychology*

An introduction to the principles of human behavior.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

GENERAL PSYCHOLOGY

PSY.—S.11a, b

Henry D. Bates, Ph.D., *Assistant Professor of Psychology*

An introduction to the principles of human behavior.

Intersession: Monday, Wednesday and Friday, 6:00–9:00 p.m.

Summer Session: Monday, Wednesday and Friday, 6:00–8:00 p.m.

THE PSYCHOLOGY OF DREAMS, MYTHS AND SYMBOLS PSY.—S.126Bernard Kaplan, Ph.D., *Professor of Psychology*

A critical examination of various theories of symbol-formation with special emphasis on the origins, structures and functions of dreams and myths. The relation of dream-formation to psychopathology and the recent work on the physiological bases of dreaming will also be discussed. Prerequisite: Consent of the instructor. Psychology of Language desirable but not necessary. Limited to 13 students.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

INTRODUCTION TO CHILD PSYCHOLOGY

PSY.—S.150

James D. Laird, Ph.D., *Assistant Professor of Psychology*

The development of the child's personality and interpersonal behavior, in relation to family, peer group and culture. Prerequisite: General Psychology.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

PSYCHOLOGY OF PERSONALITY

PSY.—S.172

Morton Wiener, Ph.D., *Professor of Psychology*

A course dealing with the concepts and issues involved in the psychology of personality. Attention will be given to various approaches to the study of personality such as trait theories, typologies, field theory, and psychoanalysis. Methods of appraising personality will also be considered. Prerequisite: General Psychology.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

PSYCHOLOGY OF LEARNING

PSY.—S.215

David A. Stevens, Ph.D., *Assistant Professor of Psychology*

Methods and findings in the study of learning will be discussed, with emphasis on their relation to theories of learning. Selected controversial issues will be examined. Prerequisite: General Psychology.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

Summer Session

BIOLOGY

EVOLUTIONARY BIOLOGY

BIO.—S.100

William A. Hutchinson, M.A., *Associate Professor of Biology*
Holyoke Community College

An examination of evolutionary ideas, principles of classification, Mendelian, non-Mendelian and population genetics, analysis and evidence for natural selection and adaptation, the fossil record and the evolution of higher plants and animals. Prerequisite: None, but a previous course in the biological sciences would be most helpful. 4 semester hours credit.

Monday through Friday, 9:15–10:25. a.m.,
Friday, Laboratory after class meeting

INTRODUCTION TO IMMUNOLOGY AND IMMUNOCHEMISTRY

BIO.—S.250

Harris Rosenkrantz, Ph.D., *Professor of Biochemistry*

A study of the cellular and humoral responses of immune reactions and the biochemical techniques used for measuring them. The nature of antigens, antibodies, and antigen antibody reactions will be discussed. The methods of complement fixation, precipitation, agglutination, immunoelectrophoresis, agar-gel double diffusion and others will be reviewed. Prerequisites: Introductory biology and chemistry. (No laboratory.)

Monday through Friday, 11:45–12:55 p.m.

BUSINESS ADMINISTRATION

BUSINESS STATISTICS*

B.A.—S.16a, b

Albert J. Sargent, M.B.A., *Instructor*

This course is designed to give the student a knowledge of the basic statistical techniques and procedures as they are applied to business and economic data. Lectures and laboratory exercises. Prerequisite: Math. 11.

Monday, Wednesday and Friday, 6:00–10:00 p.m.

CORPORATION FINANCE

B.A.—S.18

Cornelius F. Walsh, M.B.A., *Assistant Professor of Business Administration*

A study of the financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

*Double course.

BUSINESS LAW

B.A.—S.20b

Reginald J. Smith M.Ed., *Associate Professor of Law and Accounting*
Holy Cross College

See description under Intersession. Prerequisite: B.A.—S.20a.

Tuesday and Thursday, 6:00–9:00 p.m.

PRINCIPLES OF ACCOUNTING

B.A.—S.117b

Frederick R. Strobel, M.B.A., *Instructor, Holy Cross College*

See description under Intersession. Prerequisite: B.A.—S.117a.

Tuesday and Thursday, 6:00–9:00 p.m.

PRINCIPLES OF MARKETING

B.A.—S.124

George A. Balko, Jr., M.B.A., *Assistant Professor of Business Administration*

An analysis of the institutions and processes involved in the distribution of goods and services, including a study of consumer motivation, retailing and wholesaling institutions, and marketing policies and practices. (This course may not be counted toward the A.B. degree.)

Monday, Wednesday and Friday, 6:00–8:00 p.m.

ANALYSIS OF BUSINESS PROBLEMS*

B.A.—S.220a, b

Irwin A. Shapiro, M.B.A., *Lecturer*

An intensive analysis of specific problems of administration and policymaking. Designed to integrate the principles covered in more specialized courses in Business Administration in order that the student may acquire an appreciation of the broad business picture while developing his ability to view business and economic problems from an overall standpoint. *Open only to advanced Business Administration degree candidates. Limited to 12 students.* (This course may not be counted toward the A.B. degree.)

Monday, Wednesday and Friday, 6:00–10:00 p.m.

Graduate Courses in Business Administration**FOUNDATIONS OF BUSINESS**

B.A.—S.320

Cornelius F. Walsh, M.B.A., *Assistant Professor of Business Administration*

Genesis and historical perspectives of business in society. Determination of business goals and social goals. Evaluation of business behavior. The profit motive. The responsibility of businessmen. Public policy as it affects business. Discussion of the views of some apologists and critics of business.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

*Double course.

MARKETING RESEARCH

B.A.—S.340

George A. Balko, Jr., M.B.A., *Assistant Professor of Business Administration*

The systematic and objective search for and analysis of information for the solution of marketing problems. The value of information, research design, means of acquiring and measuring data, design of samples, analysis of data, experimentation, forecasting.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

ECONOMICS**PRINCIPLES OF ECONOMICS**

EC.—S.11b

Carolyn A. Murphy, M.A., *Lecturer*

See description under Intersession. Prerequisite: EC.—S.11a.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

PUBLIC FINANCE

EC.—S.210

Herrington J. Bryce, Ph.D., *Assistant Professor of Economics*

The economics of government revenue and expenditure policies are analyzed. Prerequisite: Principles of Economics.

Tuesday and Thursday, 6:00–9:00 p.m.

EDUCATION**METHODS AND MATERIALS IN ELEMENTARY EDUCATION**

ED.—S.201

Spencer Potter, M.A., *Instructor, Department of Education*

An introduction to teaching in the middle grades (4–6). Particular emphasis will be given to methods of teaching as they may be applied with reference to and concern for the pupil. Class participation will emphasize the practical orientation of the course.

Tuesday and Thursday, 6:00–9:00 p.m.

INTRODUCTION TO AMERICAN EDUCATION

ED.—S.207

Richard Gordon, Ph.D., *Assistant Professor of Education*

A comprehensive and systematic study of American education, with emphasis on recent educational innovations, the role of the states and the Federal Government in education, the structure and organization of the schools, and the status of teachers. Intended for prospective and in-service teachers and others with an interest in American education.

Monday through Friday, 9:15–10:25 a.m.

PRINCIPLES, PRACTICES, AND ORGANIZATION IN GUIDANCE

ED.—S.211

Spencer Potter, M.A., *Instructor, Department of Education*

A survey of guidance and personnel work. Principles bearing upon guidance and student personnel practices will be developed. Aspects of related fields will be reviewed sufficiently to indicate the scope and content of guidance and personnel work. The problem of organizing and administering a guidance program will form an important part of this course.

Monday through Friday, 10:30–11:40 a.m.

ENGLISH

ENGLISH COMPOSITION AND LITERATURE

ENG.—S.11b

John McLaughlin, M.A., *Lecturer*

See description under Intersession. Prerequisite: ENG.—S.11a.

Tuesday and Thursday, 6:00–9:00 p.m.

EXPOSITORY WRITING

ENG.—S.18

Robert A. Barakat, Ph.D., *Assistant Professor of English*

This course is designed to help students improve their expository writing through the study and application of rhetorical methods. Diction, sentence structure, paragraph integrity, theme organization, logic, semantics, persuasion, the relationship of idea to expression and of expression to audience are among the matters analyzed.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

SEMINAR: SPECIAL STUDIES IN RENAISSANCE DRAMA ENG.—S.206

John H. Smith, Ph.D., *Professor of English, Brandeis University*

A detailed study of a limited number of sixteenth and early seventeenth century plays, chosen for their aesthetic qualities, their representativeness, and their interesting problems. The treatment of these plays will be intensive rather than extensive, but the critical and textual problems explored will provide insights into the broad developments of Renaissance drama without being a survey. Shakespeare will not be treated explicitly, but a knowledge of some Shakespearean plays is recommended. Members of the seminar will participate fully in the exploration of problems. Prerequisite: consent of the instructor or of the Chairman of the English Department. *Four semester hours credit.*

Tuesday and Thursday, 9:30–12:30 p.m.

FINE ARTS

SYMPHONY AND SYMPHONIC POEM

F.A.—S.125

Donald Lafferty, M.F.A., *Instructor in Music*

Traces important classic, romantic, and modern works. Designed to create active listening habits applicable to all forms of musical enjoyment. No previous knowledge of music required.

Tuesday and Thursday, 6:00–9:00 p.m.

HISTORY

THE COLD WAR

HIST.—S.16

John O. Iatrides, Ph.D., *Chairman of Dept. of Political Science,
Southern Connecticut State College*

An analysis of the conflict between the Soviet Union and the United States since World War II. The lectures and discussions will attempt to clarify the various aspects—ideological, military, and others—of Soviet-American hostility.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

AMERICAN HISTORY TO 1850

HIST.—S.133

Gerald W. Gawalt, M.A., *Lecturer*

A survey of the history of the United States from its first foundations. Emphasis will be placed on the American colonies and the Puritan heritage, the Revolution, the Federalist era, Jeffersonianism, the phenomenon of Jacksonian democracy, and the ante-bellum period.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

THE FIRST WORLD WAR

HIST.—S.205

David W. Savage, Ph.D., *Assistant Professor of English History*

A seminar on the origins, course, and consequences of the First World War. The readings and discussion will be concerned with the nature of the military conflict, the domestic political scene, and the impact of the war on the American and European consciousness. While the focus of the reading and discussion will be on Europe and on the years 1914–1918, the historical setting of the first three decades of the twentieth century will be provided.

Tuesday and Thursday, 6:00–9:00 p.m.

HISTORY OF THE BRITISH EMPIRE-COMMONWEALTH SINCE 1783

HIIST.—S.200

William A. Green, Jr., Ph.D., *Assistant Professor of History,*
Holy Cross College

This course examines British reactions to the loss of the American colonies and successive modifications in the old colonial system, i.e., the emancipation of slaves, the elimination of protective tariffs, and the abandonment of the navigation system. It analyzes conflicting attitudes in England toward the colonial establishment during the mid-century period, noting the growth of anti-imperialist sentiment while acknowledging the steady enlargement of imperial responsibility. Greatest emphasis will be placed on the post-1870 expansion of the British Empire, with the chief focus upon Africa. The transition from Empire to Commonwealth and the subsequent decline of imperial power will be treated in narrower scope.

Monday through Friday, 8:00–9:10 a.m.

LANGUAGES

GERMAN

INTRODUCTORY GERMAN*

GER.—S.11

James S. Edwards, M.A., *Associate Professor of German*

A comprehensive introduction to the written as well as the spoken language. The course aims at acquisition of all four skills: reading, writing, speaking and understanding. *Students taking this course should not attempt a second because this course will demand the full time of the student.*

Monday through Friday, 9:15–10:25 a.m. and 11:45–12:55 p.m.

INTERMEDIATE GERMAN*

GER.—S.12

Erika E. Theobald, Ph.D., *Assistant Professor of German*

Review of German grammar. Study of expository and narrative prose. Aural and oral training in the language. *Students taking this course should not attempt a second because this course will demand the full time of the student.*

Monday through Friday, 9:15–10:25 a.m. and 11:45–12:55 p.m.

SPANISH

INTRODUCTORY SPANISH*

SP.—S.11

Raymond E. Barbera, Ph.D., *Associate Professor of Romance Languages*

For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing.

Laboratory fee: \$20.00.

Monday through Friday, 8:00–9:10 a.m. and 2:00–3:10 p.m.

*Double course.

MATHEMATICS

FUNDAMENTALS OF MATHEMATICS

MATH.—S.11b

Robert J. Perry, M.A., *Lecturer*

See description under Interession. Prerequisite: Math.—S.11a.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

PHILOSOPHY

PROBLEMS OF PHILOSOPHY

PHIL.—S.11

Walter E. Wright, M.A., *Assistant Professor of Philosophy*

Nature and method of philosophy. Application of philosophical method to contemporary personal and social problems. Detailed analysis of some typical problems in various fields of philosophy.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

NIETZSCHE AND KIERKEGAARD

PHIL.—S.135

Walter E. Wright, M.A., *Assistant Professor of Philosophy*

Study of selected works of two thinkers who have exerted a profound influence on existentialism and contemporary philosophy of religion.

Monday through Friday, 10:30–11:40 a.m.

PSYCHOLOGY

GENERAL PSYCHOLOGY

PSY.—S.11b

Henry D. Bates, Ph.D., *Assistant Professor of Psychology*

See description under Interession. Prerequisite: PSY.—S.11a.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

PSYCHOLOGY AND POLITICAL LIFE

PSY.—S.155

Bernard Kaplan, Ph.D., *Professor of Psychology*

A discussion of psychological factors determining political attitudes, political affiliations and political action. Topics to be treated include: indoctrination, brain-washing, psychological appeals of left and right. Focus will be on relevance to the contemporary political scene.

Tuesday and Thursday, 6:00–9:00 p.m.

ABNORMAL PERSONALITY

PSY.—S.203

Morton Wiener, Ph.D., *Professor of Psychology*

A survey of the forms of abnormal behavior and theories of abnormality. Prerequisites: General Psychology and one other Psychology course, preferably Psychology of Personality.

Monday through Friday, 8:00–9:10 a.m.

BEHAVIORAL SCIENCE AND ENVIRONMENT

PSY.—S.207

Joachim F. Wohlwill, Ph.D., *Professor of Psychology*

An overview of the new field of environmental psychology. Topics to be considered include the perception of and interest in aspects of the physical environment, exploration and awareness of the environment, and attitudes towards it. Students will conduct several experimental and field studies relating to these topics. Prerequisite: General Psychology or consent of the instructor.

Monday through Friday, 10:30–11:40 a.m.

SOCIOLOGY

PEOPLES OF THE WORLD

SOC.—S.12

Paul A. Erickson, B.A., *Lecturer*

An introductory course in Cultural Anthropology designed to acquaint students comparatively with a selection of peoples and culture different from our own as an aid to objective analysis of contemporary society and as a basis for useful generalizations about human social behavior. A foundation course for advanced work in Sociology.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

CRIME, LAW AND SOCIETY

SOC.—S.13

To be announced

A survey of the basic principles of criminology and juvenile delinquency. Emphasis on causes of crime and delinquency in our multi-group society. Various theories to be discussed including Sociological Theories of crime. The nature of law and of criminal law as a means of social control. The organization and work of criminal and juvenile courts and recent developments. Recent trends in the U.S. and recent leading decisions of the U.S. courts and of the Supreme Court of U.S. The probable shape of things to come. Recent cases and ideas in England and U.S. concerning due process, the jury's role, individual safeguards, the problem of pornographic literature, the defense of insanity and such current problems. (Guest speakers in this field.)

Monday through Friday, 11:45–12:55 p.m.

RACE AND ETHNIC RELATIONS

SOC.—S.23

Stanford N. Gerber, Ph.D., *Assistant Professor of Sociology*

Analysis of racial, ethnic, and religious minorities; the relationship between minorities and basic American institutions; theories of minority group relations. Particular attention is given to the meaning of race and contemporary race relations.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

COURSE SCHEDULE

INTERSESSION—DAYS—JUNE 10—JUNE 29—All classes meet twice a day 9:00 a.m. and 2:00 p.m. with the exception of Directed Study in Yeats and Joyce

Bio. —S.17	Field Ecology	Hutchinson
Eng. —S.155	Modern Continental Drama	Schroeder
*Eng. —S.200	Directed Study in Yeats and Joyce	Sultan
F.A. —S.100	Art Studio Workshop	Murphey
F.A. —S.102	Introduction to Music	Fuller
F.A. —S.190	Masterpieces of Oriental Art	Cowardin
Geol. —S.12a	Physical Geology	Bryers
Psy. —S.11a	General Psychology	Stein
Psy. —S.126	The Psychology of Dreams, Myths and Symbols	Kaplan
Psy. —S.172	Psychology of Personality	Wiener

INTERSESSION—NIGHTS—JUNE 10—JULY 5—All classes meet Monday, Wednesday and Friday, 6:00—9:00 p.m.

B.A. —S.20a	Business Law	Smith
B.A. —S.117a	Principles of Accounting	Strobel
E.C. —S.11a	Principles of Economics	Michalopoulos
E.C. —S.113	Money and Banking	Savage
Ed. —S.208	Methods and Materials in Secondary Education	Gordon
Eng. —S.10	Introduction to Literature	Barakat
Eng. —S.11a	English Composition and Literature	McLaughlin
Eng. —S.12	Public Speaking	Kennedy
Eng. —S.213	Shakespeare	Anderson
F.A. —S.10	Introduction to the Humanities	Deane
Geol. —S.12a	Physical Geology	Bryers
Gov. —S.15	American Government	Worsley
Hist. —S.282	The Soviet System	Iatrides
Math.—S.11a	Fundamentals of Mathematics	Perry
Psy. —S.11a	General Psychology	Bates
Psy. —S.150	Introduction to Child Psychology	Laird
Psy. —S.215	Psychology of Learning	Stevens

SUMMER SESSION—(Day Classes)—JULY 1—AUGUST 17

8:00—9:10 a.m. Monday through Friday

Hist. —S.200	History of the British Empire-Commonwealth Since 1783	Green
**Sp. —S.11	Introductory Spanish	Barbera
Psy. —S.203	Abnormal Personality	Wiener

9:15—10:25 a.m. Monday through Friday

Bio. —S.100	Evolutionary Biology	Hutchinson
Ed. —S.207	Introduction to American Education	Gordon
**Ger. —S.11	Introductory German	Edwards
**Ger. —S.12	Intermediate German	Theobald

9:30—12:30 p.m. Tuesday and Thursday

Eng. —S.206	Seminar: Special Studies in Renaissance Drama	Smith
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10:30—11:40 a.m. Monday through Friday

Ed. —S.311	Principles, Practices, and Organization in Guidance	Potter
Phil. —S.135	Nietzsche and Kierkegaard	Wright
Psy. —S.207	Behavioral Science and Environment	Wohlwill



Clark University

Summer School

Worcester, Massachusetts

Interession, Days, June 9–June 28

Interession, Nights, June 9–July 3

Summer Session, Days, June 30–August 16

Summer Session, Nights, July 7–August 16

Master of Business Administration Program, June 2–August 1

1969

CLARK UNIVERSITY BULLETIN

Number 305

April, 1969

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Clark University Summer School

The offerings in the two Summer School Sessions are designed to satisfy the academic and cultural needs of college students, professional people and the general public. Most of the courses will enable undergraduate and graduate students to accelerate their college careers by satisfying standard departmental requirements in the humanities and sciences. Of particular interest to graduate students are the courses in psychology, linguistics and foreign languages. Programs in economics and business administration are appropriate both to college students and business executives; several courses in education, linguistics, social science and film are available for high school teachers who seek professional advancement; and a scholarship program sponsored by the Department of Justice will enable policemen to enroll in relevant disciplines.

Courses new to the Clark Summer School, and of both academic and general interest, are "The Black in Literature," "The Don Juan Legend," "Radical Religion in the Twentieth Century," and "Protest in Contemporary Literature" (Eng. 10). Evening classes in liberal arts and business will be offered for those who have part-time summer jobs during the day and wish to earn academic credit at the same time, as well as for those who are continuing their studies in the Clark University Evening College.

The University's new Robert Hutchings Goddard Library contains over 270,000 volumes and some 50,000 maps and charts. The major part of the collection is centrally housed, and an open shelf system fosters free access to books and periodicals. Special studies at other Worcester institutes are available at the Worcester Art Museum, one of the finest small museums in the country; the American Antiquarian Society, whose collection of original source Americana is unmatched; and at Assumption College, which is sponsoring courses in linguistics, film and religion. In the surrounding area are many places of interest to the student. Boston, with its wealth of culture and entertainment, is an hour away, and Sturbridge Village, the antique center of New England, is a twenty-minute drive from Worcester.

Degrees and Credits

All courses offered are accepted at Clark for credit toward the degree of Bachelor of Arts or the Evening College degrees of Bachelor of Science in General Studies, Bachelor of Science in Business Administration or Bachelor of Fine Arts unless specifically limited to one of the degrees stated in the course description. Many courses in the Summer School count toward the degrees of Master of Art, Master of Arts in Education and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit, unless otherwise specified in the course description.

A student may carry in a normal program one course in the Interession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration. Course changes after the third day of classes must be approved by the Director.

One transcript of a student's Summer School record is available free of charge. Additional Summer Session transcripts should be requested at the Registrar's Office, 18 Downing Street. There is a \$1.00 fee for each additional transcript.

Clark University, through the Division of Business Administration, offers the MBA degree. Non-matriculated students may take the courses in the 200-level series, but only students formally accepted in the program may register for 300-level courses. Tuition is \$150 a course. For further information, see the *MBA Bulletin*, available in Room 207, Jonas Clark Hall, or call 793-7554.

TUITION AND FEES

A matriculation fee of \$5.00 is required of all students entering Clark University for the first time. The tuition for each three semester hour course is \$135.00 (except in the case of the MBA degree, noted above). Persons who wish to audit a course without receiving credit, register and pay tuition at the stated rate. However, students taking two courses for credit during the Summer Session may audit a third course without additional cost. Tuition and fees must be paid in the Summer School Office immediately following registration. A fee for late registration of \$3.00 must be paid by students who fail to complete registration within the official Registration Period. There is a fee of \$5.00 for pre-registration that is applicable to tuition but non-refundable.

WITHDRAWALS AND REFUNDS

Requests for withdrawal must be made in *writing* and will become effective upon receipt in the Summer School Office. *Discontinuance of attendance or notice to the instructor does not constitute withdrawal.* Partial refunds of full tuition will be made only under these circumstances and in accordance with the following schedule:

Interession—Days and Nights

June 9, 10	full refund
June 12, 13	two-thirds
June 14	one-third

Summer Session—Days

June 30, July 1	full refund
July 2, 3	two-thirds
July 7	one-third

Summer Session—Nights

July 7, 8	full refund
July 9, 10	two-thirds
July 11	one-third

LIVING FACILITIES AND COSTS

Rooms will be available for both men and women in the new University dormitories but reservations should be made promptly on or before June 1. Address requests to: Bob Smith, Coordinator of Summer Conference Programs, Summer School Office, Clark University, 950 Main Street, Worcester, Massachusetts. Room rent is \$14.00 (including linen supplies) per week for single room occupancy and \$11.50 (including linen supplies) for double. A non-refundable deposit of \$10.00 is required in advance to hold a room. In addition there is a \$1.00 refundable key deposit.

FOOD SERVICE INFORMATION

Clark University will offer breakfast, lunch and supper in the Snack-Bar, Jefferson Hall, Monday through Friday, 7:30 a.m. to 6:30 p.m. Meal tickets may be purchased on a weekly basis covering 15 meals for a price of \$19.00. Meal tickets will entitle you to seconds on any meal. A la carte service will be available during the same hours. The Snack-Bar will be open June 9 through August 16.

MAIL SERVICE

Student mail will be distributed through individual boxes in the Central Services Office located in Estabrook Hall. A \$1.00 refundable key deposit is required.

LIBRARY HOURS

The library at Clark University will be open Monday through Thursday, 9:00 a.m. to 8:00 p.m., and Friday, 9:00 a.m. to 5:00 p.m.

COURSE CANCELLATION

If there is insufficient demand for any course listed, it will not be given and the applicant will be notified prior to the opening of the Summer School. Tuition will be refunded in full for any course that does not run. Subject to demand, additional courses may be added.

VETERANS

Veterans attending the 1969 Summer School should designate by writing *Veteran* in the left-hand corner of the registration card.

Veterans who are non-Clark students are reminded that Certificates of Eligibility held during the Spring Semester of 1969 do not apply to the Summer School and that a new application must be completed for the course of summer study.

ADMINISTRATIVE OFFICERS OF THE UNIVERSITY

Frederick H. Jackson, *President*

Robert M. Hyde, *Executive Vice-President*

Robert F. Campbell, *Dean of the College*

Charles S. Blinderman, *Director of the Summer School*

Special Programs

THE AMERICAN LEADERSHIP STUDY GROUPS

The Clark University Summer School, in cooperation with the A.L.S.G., offers each summer a program of overseas study and travel. Academically, the program is concerned with the history and cultural foundations of Western Europe. It is five weeks in length (July 5–August 8) and includes week-long study periods at the universities of London, Rome and Paris.

Participation in the A.L.S.G. summer program is made available to suitably qualified high school upperclassmen and college students throughout the United States. The selection of members and alternates is based on scholarship, character, and in general an ability to assimilate and profit from the program offered. (Non-credit.)

NDEA INSTITUTE FOR ADVANCED STUDY IN AMERICAN HISTORY

The prime purpose of this Institute is to provide in-service teachers, grades 9–12, with an introduction to recent developments in American Urban and Negro History. The program will center around three study units: the first, tracing the history of black Americans, the second, focusing on the development of the American city up to the 20th century, the third, consisting of an integrated analysis of black history and the urban crisis of the 20th century.

Part of the Institute will be devoted to translating the substantive materials in such a way as to meet classroom needs. Every participant will attend at least one seminar per week devoted to the problem of modifying existing curriculums in the light of new viewpoints in American history and related disciplines. These seminars will be conducted jointly by the various staff members.

Participants, upon successful completion of the Institute program, will receive eight semester hours of graduate credit.

DIAGNOSTIC AND INSTRUCTIONAL PROCEDURE: A WORKSHOP ON THE UNDERACHIEVER

This workshop will focus on bright but underachieving adolescents. It will involve working directly with students enrolled in The Student Achievement Institute, Worcester Academy, Worcester, Massachusetts.

Seminars will center on analysis of learning difficulties and development of instructional materials and strategies for dealing with individuals and small groups. The total experience will include close collaboration with the educational and clinical staff of the Institute.

The workshop sessions will take place from June 23 to August 1, 1969, both at Worcester Academy and Clark University. The program will involve a full daily schedule of observation, teaching and preparation of materials and methods for each of the six weeks. Six graduate semester hours credit will be granted for satisfactory completion of all requirements. Enrollment will be limited, selected from independent and public school personnel.

For further information address inquiries to:

Dr. Helen J. Kenney
Department of Education
Clark University
Worcester, Massachusetts 01610

EPDA FELLOWSHIP PROGRAM

A special Summer Institute for high school students, secondary school social science teachers, and college instructors will be sponsored jointly by the Clark University Graduate School and a Consortium of educational institutions in the greater Worcester area (Berlin-Boylston Schools, Worcester Public Schools, Leicester Junior College, Fitchburg State College). The Institute, sponsored by the United States Office of Education under the Education Professions Development Act, is designed to experiment with new methods and materials of teaching the social sciences and to provide opportunities for students to evaluate the effectiveness of these materials. Organized in conjunction with a new graduate degree program to train personnel in geography, economics, and history who intend to teach in teacher training institutions, the Institute will seek to open dialogue between students, teachers, and teachers of teachers. Participation will be limited to personnel and students in the Consortium.

Course Offerings

Summer, 1969

Interession

BIOLOGY

GENERAL BIOCHEMISTRY

BIO.—S.270

John J. Brink, Ph.D., *Associate Professor of Biochemistry*

The principles of mechanisms of biochemical reactions in an understanding of the metabolism of foodstuffs and the role of enzymes, nucleic acids and hormones. An acquaintance with the instrumentation in biochemical research will be presented. No laboratory. Prerequisite: Organic Chemistry.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

MARINE BOTANY

BIO.—S.15

H. William Johansen, Ph.D., *Assistant Professor of Botany*

The structure, reproduction and ecology of plants living in the sea will be studied in the laboratory and field. Emphasis will be on the benthic and planktonic algae, but attention will also be given to marine flowering plants and fungi.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

FIELD ECOLOGY

BIO.—S.17

William A. Hutchinson, M.A., *Associate Professor of Biology,
Holyoke Community College*

An introductory study of the distribution of plants and animals, their interrelationships and adaptations to such a wide variety of environments as encompassed from the seashore to the uplands of Western Massachusetts. Many all-day field trips will bring the student to the outdoor laboratory. A previous course in biology is required. Limited to 16 students.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

BUSINESS ADMINISTRATION

BUSINESS LAW

B.A.—S.20a, b

Reginald J. Smith, M.Ed., *Associate Professor of Law and Accounting,
Holy Cross College*

A study of the legal basis of business and the principles of statutory and common law as they affect business relationships; covering such subjects as contracts, agency, property, sales, partnerships, corporations, and negotiable instruments. (This course may not be counted toward the A.B. degree.)

Interession: Monday, Wednesday and Friday, 6:00–9:00 p.m.

Summer Session: Tuesday and Thursday, 6:00–9:00 p.m.

PRINCIPLES OF ACCOUNTING

B.A.—S.117a, b

Fredrick R. Strobels, M.B.A., *Instructor, Holy Cross College*

First semester: The fundamental accounting equation, the operating cycle, accruals and adjustment, preparation and analysis of statements of various forms of business organization. *Second semester:* Accounting for and analysis of major areas utilized in making management decisions including cash and investments, assets, liabilities, manufacturing operations, cost, ratio analysis, budgeting.

Intersession: Monday, Wednesday and Friday, 6:00–9:00 p.m.

Summer Session: Tuesday and Thursday, 6:00–9:00 p.m.

BUSINESS STATISTICS

B.A.—S.16a, b

George T. Kelley, M.A., *Assistant Professor of Economics, Nichols College*

This course is designed to give the student a knowledge of the basic statistical techniques and procedures as they are applied to business and economic data. Lectures and laboratory exercises. Prerequisite: Math. 11.

Intersession: Monday, Wednesday and Friday, 6:00–9:00 p.m.

Summer Session: Monday, Wednesday and Friday, 8:00–10:00 p.m.

ECONOMICS**PRINCIPLES OF ECONOMICS**

EC.—S.111a

Constantine Michalopoulos, Ph.D., *Assistant Professor of Economics*

An introduction to the fundamental economic principles, together with a study of the practical application of these principles to the problems of American life.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

MONEY AND BANKING

EC.—S.113

Donald T. Savage, Ph.D., *Assistant Professor of Economics*

The principles of money and banking; characteristics of the American monetary and banking systems; theoretical relations of money, prices, income. Prerequisite: Principles of Economics.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

EDUCATION**METHODS AND MATERIALS IN SECONDARY EDUCATION** ED.—S.208Richard J. Gordon, Ph.D., *Assistant Professor of Education*

Methods and techniques used by the teacher in junior and senior high school. Emphasis will also be upon survey of materials available.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

ENGLISH

ENGLISH COMPOSITION AND LITERATURE

ENG.—S.11a, b

Arthur Martin, *Lecturer*

The first semester discusses the problems of composition—effective organization, paragraphs, sentences, diction. The second semester will be devoted to analysis of literary types.

Intersession: Monday, Wednesday and Friday, 6:00–9:00 p.m.
Summer Session: Monday, Wednesday and Friday, 6:00–8:00 p.m.

SHAKESPEARE

ENG.—S.213

Karl O. E. Anderson, Ph.D., *Professor of English*

A study of nine major plays (comedies, histories and tragedies), aimed to bring out the development of Shakespeare as a dramatist and to trace the changes in his attitude towards life. The plays to be read are: *Romeo and Juliet*, *As You Like It*, *Richard II*, *Henry IV*, Part I, *Julius Caesar*, *Hamlet*, *Lear*, *Othello*, *Macbeth*. Prerequisite: English S.11a and b.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

DIRECTED STUDY IN YEATS AND JOYCE

ENG.—S.200

Stanley Sultan, Ph.D., *Professor of English*

This course is designed for advanced undergraduates and graduate students, and participation is by consent of the instructor (which may be secured by letter). After a series of meetings of the whole class, each student will develop and delineate a project, dealing with either figure or both, to culminate in a paper of five thousand to ten thousand words (twenty to forty pages). Each student will confer with the instructor or submit a weekly progress report, until at the end of the sixth week a series of seminars will be held at which students will present orally the results of their studies. The papers will be due at the end of the eighth week, and the instructor will discuss each paper with its author in a subsequent conference.

Calendar for Directed Study in Yeats and Joyce

June 19 and 20, 10:00–12:00 noon, 2:00–4:00 p.m.: background, bibliography, research information (compulsory)

June 25, July 2, 9, 16, 23: conferences or progress reports

July 30 and 31, 10:00 a.m.–12:00 noon, 2:00–4:00 p.m.: final seminars (appropriate sessions compulsory)

August 13, 4:00 p.m.: papers due

FINE ARTS

MICHELANGELO AND THE HIGH RENAISSANCE

F.A.—S.155

Samuel P. Cowardin, III, Ph.D., *Associate Professor of Fine Arts*
Chairman, Fine Arts Department

This course will concentrate on Michelangelo's work in architecture, sculpture, and painting, taking into account personal, religious, intellectual, and political influences in his life. His style will be viewed in relation to the Renaissance background as well as the Mannerist trends of the sixteenth century. Readings, class discussions with slides, and a paper.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

ART STUDIO WORKSHOP

F.A.—S.100

John T. Murphey, B.S., *Assistant Professor of Fine Arts*

An art involvement course designed for those with little or no experience in art production in which the student will experiment in class in a variety of mediums and approaches to increase his understanding as well as his ability in the visual arts. Projects will include representational drawing, still life painting, statements in meaning, abstract painting, action-painting, collage, clay sculpture, constructions, "found-objects," environments, and happenings. Grade rests on effort and understanding. There will be an additional fee for materials of about \$25.00 payable at the first meeting. Enrollment limited to 10 students. This course will run through July 3.

Monday, Wednesday and Friday, 9:00–12:00 days

HISTORY

THE ORIGINS OF WORLD WAR I

HIST.—S.214a

Robert J. Smith, M.A., *Lecturer*

A study of the origins of the First World War. Various interpretations of the causes of the war, and the diplomatic crises which led to the impasse in 1914, will be emphasized. Internal political problems that had an indirect influence on the outbreak of the conflict will also be stressed.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

MODERN AMERICAN SOCIAL REFORM

HIST.—S.141

John A. Worsley, M.A., *Assistant Professor of History,*
Worcester Polytechnic Institute

This course will basically be a course in social-intellectual history, considering movements of social reform and patterns of thought in the United States since Reconstruction. Topics such as education, labor, business, and major movements and ideas of reform will be covered.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

LANGUAGES**BASIC GERMAN FOR READING**

GER.—S.10

Walter Schatzberg, Ph.D., *Assistant Professor of German*

An intensive study of German grammar to prepare the student for independent reading of scholarly and scientific German texts. No previous knowledge of German required.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

COMPARATIVE LITERATURE: THE DON JUAN LEGEND SP.—S.120Raymond E. Barbera, Ph.D., *Associate Professor of Romance Languages*

A study will be made of the origins of the Don Juan legend, its initial dramatization in Spain, subsequent imitations and elaborations particularly in Italy and France. Attention will be paid to critical evaluations of the major works and their place in the epoch they are written.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

BEGINNING FRENCH FOR READING KNOWLEDGE FR.—S.100Clodius Willis, M.A.T., *Assistant Professor of Romance Languages*

A course in beginning French with emphasis on reading for comprehension. While some time will be spent introducing basic aural-oral skills in the foreign language, concentration will be on learning grammar and vocabulary necessary to read extensively in a variety of fields in the humanities and science. No previous knowledge of French required.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

MATHEMATICS**FUNDAMENTALS OF MATHEMATICS**

MATH.—S.11a, b

Robert H. Perry, M.A., *Lecturer*

A logical development of elementary mathematics: including an axiomatic treatment of the real number system, arithmetic and elementary algebra, functions and relations, polynomials and topics from the theory of equation, introductory analytic geometry and the exponential, logarithmic, and trigonometric function. As a background, the arithmetic and algebra over arbitrary sets will first be considered.

Interession: Monday, Wednesday and Friday, 6:00–9:00 p.m.

Summer Session: Monday, Wednesday and Friday, 6:00–8:00 p.m.

INTRODUCTORY CALCULUS

MATH.—S.12a, b

Bernard Howard, M.A., *Lecturer*

A first course in Calculus. The main topics to be covered will be differentiation, integration and related topics including related rates, max-min problems, mean value theorems, volumes, areas, moments, transcendental functions, determinants, and polar coordinates. Essential for anyone planning a career in mathematics or

one of the sciences. Must be taken in both Intersession and Summer Session. Six credit hours.

Intersession: Monday through Friday, 9:00 a.m. and 2:00 p.m.

Summer Session: Monday through Friday, 9:15–10:25 a.m.

MUSIC

INTRODUCTION TO NON-WESTERN MUSIC

MUS.—S.114

Wesley M. Fuller, M.Mu., *Associate Professor of Music*

The course will include the traditional music of China, Japan, India, sections of Southeast Asia, Africa and the music of Islam. It will consider the ways in which sound and motion were systematized in these cultures, and various levels of meaning: aesthetic, social, religious, supernatural, and cosmological. The course will include reading, discussion and listening. Prerequisite: An introductory music course or permission of instructor.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

PHILOSOPHY

NINETEENTH CENTURY GERMAN PHILOSOPHY

PHIL.—S.14b

Walter E. Wright, M.A., *Assistant Professor of Philosophy*

Close study of central issues in 19th century German thought, with special emphasis on the problem of the relation between the individual and his society in the writings of Hegel, Kierkegaard, and Marx. Prerequisite: six credit hours in Philosophy.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

PSYCHOLOGY

PSYCHOLOGY OF LANGUAGE

PSY.—S.125a

Bernard Kaplan, Ph.D., *Professor of Psychology*

A psychological analysis of the use of symbols in language, dreams, and myth. Prerequisite: Consent of the instructor.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

INTRODUCTION TO CHILD PSYCHOLOGY

PSY.—S.150

James D. Laird, Ph.D., *Assistant Professor of Psychology*

The development of the child's personality and interpersonal behavior, in relation to family, peer group and culture. Prerequisite: General Psychology.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

GENERAL PSYCHOLOGY

PSY.—S.11a

Donald G. Stein, Ph.D., *Assistant Professor of Psychology*

An introduction to the principles of human behavior.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

PSYCHOLOGY OF LEARNING

PSY.—S.215

David A. Stevens, Ph.D., *Assistant Professor of Psychology*

Methods and findings in the study of learning will be discussed, with emphasis on their relation to theories of learning. Selected controversial issues will be examined. Prerequisite: General Psychology.

Monday, Wednesday and Friday, 6:00–9:00 p.m.

SOCIOLOGY

CIVIL DISOBEDIENCE

SOC.—S.50

Moderator: Charles S. Blinderman, Ph.D., *Professor of English*

Restricted to policemen under the United States Department of Justice Law Enforcement Education Program. This course will present various perspectives on civil disobedience—historical, philosophical, psychological, sociological, legal and literary. Each class meeting will be addressed by an expert in one of these approaches to an understanding of civil disobedience.

Monday, Wednesday and Friday, 6:30–8:30 p.m.,
and special conference hours

Courses taught at Assumption College open to Clark University students:

Intersession

WORKSHOP IN MENTAL RETARDATION (June 2–June 20)

Summer Session:

RELIGIOUS PERSPECTIVES IN FRENCH LITERATURE	S.399
WORKSHOP FOR TEACHERS OF GERMAN	S.352
WORKSHOP IN THE TEACHING OF ENGLISH	S.392
CINEMA HISTORY AND FILM ART	S.22
AMERICAN LANGUAGE	S.200

For information on enrollment procedure, write to:

Director, Summer School
Assumption College
Worcester, Mass.

Summer Session

BIOLOGY

INTRODUCTION TO IMMUNOLOGY AND IMMUNOCHEMISTRY

BIO.—S.250

Harris Rosenkrantz, Ph.D., *Professor of Biochemistry*

A study of the cellular and humoral responses of immune reactions and the biochemical techniques used for measuring them. The nature of antigens, antibodies and antigen-antibody reactions will be discussed. The methods of complement fixation, precipitation, agglutination, immunoelectrophoresis, agar-gel double diffusion and others will be reviewed. Prerequisites: Introductory biology and chemistry. No laboratory.

Monday through Friday, 11:45–12:55 p.m.

BUSINESS ADMINISTRATION

BUSINESS LAW

B.A.—S.20b

Reginald J. Smith, M.Ed., *Associate Professor of Law and Accounting, Holy Cross College*

See description under Intersession. Prerequisite: B.A.—S.20a.

Tuesday and Thursday, 6:00–9:00 p.m.

PRINCIPLES OF ACCOUNTING

B.A.—S.117b

Frederick R. Strobel, M.B.A., *Instructor, Holy Cross College*

See description under Intersession. Prerequisite: B.A.—S.117a

Tuesday and Thursday, 6:00–9:00 p.m.

ANALYSIS OF BUSINESS PROBLEMS*

B.A.—S.220a, b

Irwin A. Shapiro, M.B.A., *Lecturer*

An intensive analysis of specific problems of administration and policymaking. Designed to integrate the principles covered in more specialized courses in Business Administration in order that the student may acquire an appreciation of the broad business picture while developing his ability to view business and economic problems from an overall standpoint. Open only to advanced Business Administration candidates. Limited to 12 students. (This course may not be counted toward the A.B. degree.) Six semester hours.

Monday, Wednesday and Friday, 6:00–10:00 p.m.

*Double Course.

BUSINESS STATISTICS

B.A.—S.16b

George T. Kelley, M.A., *Assistant Professor of Economics, Nichols College*

See description under Intersession. Prerequisite: Business Statistics S.16a.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

Graduate Studies in Business Administration

MARKETING RESEARCH

B.A.—S.340

George A. Balko, Jr., M.B.A., *Assistant Professor of Business Administration,
Chairman, Business Administration Program*

Uncertainty and the lack of data. Cost and value of (imperfect) information. Data generation for problem solving. Experimentation. See page 3.

Monday and Thursday, 6:00–8:00 p.m.

POLICY FORMULATION AND ADMINISTRATION

B.A.—S.370

George A. Balko, Jr., M.B.A., *Assistant Professor of Business Administration,
Chairman, Business Administration Program*

Decisions that cannot be expressed as rules. Delegating discretionary authority. Personal goals and business goals. Personal motivation and incentives. Problems in interpersonal relationships. Some theory of organization. Compliance and administrative control. See page 3.

Tuesday and Friday, 6:00–8:00 p.m.

PRODUCTION AND MARKETING MANAGEMENT

B.A.—S.299

Henry T. O'Hara, M.B.A., *Instructor in Business Administration*

The management of an enterprise. Perceiving demand and selecting objectives. Planning and organizing. Assembling, directing and controlling productive resources. Promotion and distribution of goods. See page 3.

Tuesday and Friday, 8:00–10:00 p.m.

MANAGERIAL ECONOMICS

B.A.—S.330

Henry T. O'Hara, M.B.A., *Instructor in Business Administration*

A framework for analyzing external data, sources of external data, the state of economic theory, the pertinence of the theory for decision-making. See page 3.

Tuesday and Friday, 6:00–8:00 p.m.

STATISTICAL ANALYSIS

B.A.—S.295a, b

Albert J. Sargent, M.B.A., *Instructor in Business Administration*

Frequency distributions and their measurement. Probability theory. Theory of sampling, decision rules and their power curves. Tests of significance, analysis of variance. Indexes, trend analysis. Linear, curvilinear and multiple regression and correlation analysis. Significance of regression parameters. Six semester hours. See page 3. Meeting twice a week, Monday and Thursday, 6:00–10:00 p.m. starting June 2 to August 1.

ECONOMICS**SPECIAL TOPICS IN HUMAN RESOURCES**

EC.—S.291

Herrington J. Bryce, Ph.D., *Assistant Professor of Economics*

This will be a special readings course in modern problems of unemployment and investment in human resources. It will be conducted in seminar form and will be open to undergraduate as well as graduate students. Prerequisite: Principles of Economics.

Monday through Friday, 9:15–10:25 a.m.

EDUCATION**CURRICULUM DEVELOPMENT IN SECONDARY EDUCATION**

ED.—S.203

Robert Weiser, M.A., *Lecturer*

The basic objectives, issues, principles, and procedures of curriculum development will be studied. Emphasis will also be given to educational innovation.

Tuesday and Thursday, 9:30–12:30 p.m.

ENGLISH**ENGLISH COMPOSITION AND LITERATURE**

ENG.—S.11b

Arthur Martin, *Lecturer*

See description under Intersession.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

POE, HAWTHORNE AND MELVILLE

ENG.—S.233

James F. Beard, Jr., Ph.D., *Professor of English*

A study of selected short stories, longer fiction and criticism by Poe, Hawthorne and Melville: their philosophical assumptions, symbolic techniques, and artistic accomplishments. Primarily for advanced undergraduates and graduate students.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

CONTEMPORARY AMERICAN FICTION

ENG.—S.106

James F. Beard, Jr., Ph.D., *Professor of English*

A critical introduction to the best American fiction since about 1900, with emphasis on its aesthetic values, sociological insight, and philosophic implications. Authors read and discussed will include Henry James, Theodore Dreiser, F. Scott Fitzgerald, Sherwood Anderson, Ernest Hemingway, William Faulkner, Truman Capote, J. D. Salinger, Norman Mailer, James Purdy, Saul Bellow and others.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

BLACK IN LITERATURE

ENG.—S.216

David D. Britt, Ph.D., *Assistant Professor, Wabash College*

This course will explore the nature of the black experience as it is depicted in the literature of both black and white writers. The focus will be on the black protest writers of the forties and fifties: Wright, Hughes, Baldwin, and Ellison. The fiction by these men will be studied both as literature and as documents that reveal the patterns of white oppression and black emotional response.

Monday through Friday, 11:45–12:55 p.m.

EXPOSITORY WRITING

ENG.—S.18

David D. Britt, Ph.D., *Assistant Professor, Wabash College*

The purpose of this course is to improve the students' writing skills by teaching them to read critically both their own work and the work of established authors.

Monday through Friday, 9:15–10:25 a.m.

INTRODUCTION TO LITERATURE

ENG.—S.10a

Andrew Clark, Ph.D., *Lecturer*

A critical survey of the theme of protest or "dissent" as reflected in contemporary American and British literature with concentration largely on two movements: "American Beat Generation" and "English Angry Young Men."

Monday through Friday, 9:15–10:25

ANGER AND AFTER: NEW VOICES AND VOGUES IN CONTEMPORARY
BRITISH DRAMA

ENG.—S.128

Andrew Clark, Ph.D., *Lecturer*

An introduction to the new generation of young British playwrights from John Osborne to the present; some consideration of movements and developments including theaters of protest: "Social Realism" and "The Theater of the Absurd" with emphasis on the vitality and variety in British literature.

Monday through Friday, 11:45–12:55 p.m.

INTRODUCTION TO LINGUISTICS

ENG.—S.240

Louis G. Heller, Ph.D., *Associate Professor of Classical Languages and Hebrew,
The City College, City University of New York*

A study of the theory and methodology of descriptive linguistics. The course deals with the nature and function of language, the relation between speech and writing, phonology, morphology, syntax, lexicology, the sociocultural setting of language, the contact of linguistics systems, and the problems of "correctness." Emphasis is placed upon the dynamics of systems analysis.

Monday, Wednesday and Friday, 10:25–11:40 a.m.
plus special conference hours

THE STRUCTURE OF MODERN AMERICAN ENGLISH ENG.—S.255

Louis G. Heller, Ph.D., *Associate Professor of Classical Languages and Hebrew,
The City College, City University of New York*

An analysis of the grammatical structure of Modern American English, utilizing the insights of major linguistic approaches.

Monday, Wednesday and Friday, 12:00–1:15 p.m.
plus special conference hours

FINE ARTS

INTRODUCTION TO WESTERN ART

F.A.—S.11

John Baker, M.A., *Lecturer*

This course will be devoted to an investigation of aspects of the evolution of Western Art from ancient Greece through the Twentieth Century. It will concentrate on a limited number of the key turning points in the history of the evolution of artistic styles. It is hoped that this will provide the student with the opportunity to reflect critically upon the methods and assumptions of the art historians whose works he will read. Class discussions will be welcomed and the formation of an independent critical outlook will be encouraged.

Monday through Friday, 11:45–12:55 p.m.

INTRODUCTION TO DRAWING, PAINTING AND DESIGN F.A.—S.105

Sante Graziani, M.F.A., *Associate Professor (affiliate) of Fine Arts,
and Leon Shulman*

A course aiming to acquaint the student with the fundamentals of studio practice in drawing, painting and design.

Taught at Worcester Art Museum.

Tuesday and Thursday, 9:30–12:30 p.m.

ARTS OF THE FAR EAST

F.A.—S.190

Changboh Chee, Ph.D., *Associate Professor in Sociology and Anthropology,
Long Island University*

A study of the aesthetic principles and related techniques of the Far Eastern arts; Chinese, Japanese, Korean, and Indian with special attention to the relationships between the philosophical and religious backgrounds and the aesthetic expressions in their paintings, architecture, and poetry literature.

Tuesday and Thursday, 6:00–9:00 p.m.

GEOGRAPHY

AFRICAN CULTURE

GEO.—S.110

Reed F. Stewart, *Lecturer*

Present cultures of Tropical Africa—an introduction to contemporary diversity, in relation to language groupings, technologies, economies, environments, and national problems and opportunities.

Monday through Friday, 11:45–12:55 p.m.

GEOGRAPHY: FACTORS AND CONCEPTS

GEO.—S.200a

Henry J. Warman, Ph.D., *Professor of Geography*

Equivalent to a semester's content course in geographic elements—both physical and cultural, but with emphasis upon the conceptual framework of the discipline. Especially helpful to those teaching or intending to teach Geography as a separate discipline or within the Social Studies. Individual projects will be directed according to the students' needs and interests.

Monday through Friday, 8:00–9:10 a.m.

GOVERNMENT

BLACK POLITICAL THOUGHT

GOV.—S.206

Knud Rasmussen, Ph.D., *Associate Professor of Government*

This course will trace a conscious development within the black community starting from the slave society and moving to the present. In the process, three lines of thought will be developed: a) the political thought of accommodation, b) the political thought of protest, and c) the political thought of revolutionary confrontation. There will be a series of films and guest speakers to cover material not included in the required reading.

Monday through Friday, 9:15–10:25 a.m.

URBAN GOVERNMENT AND POLITICS

GOV.—S.230b

David Nichols, Ph.D., *Assistant Professor of Political Science,
University of Massachusetts*

The course examines the development of the modern American metropolis; typical forms of government and patterns of political power in cities; and contemporary urban problems, including race relations and the role of city planning. Prerequisite: A one semester course in the government or modern history of the United States.

Monday through Friday, 10:30–11:40 a.m.

THE AMERICAN POLITICAL SYSTEM

GOV.—S.190

David Nichols, Ph.D., *Assistant Professor of Political Science,
University of Massachusetts*

The course examines the theory and practice of American liberalism; that is, the problem of what the relation between the individual and the state ought to be, and the related problem of how individuals in fact do affect, and are affected by, government acts. The unifying purpose is to describe the distribution and function of political power in the American system today. Prerequisite: A one semester introductory course in American government.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

INTRODUCTION TO POLITICAL SCIENCE

GOV.—S.159a

Martin Goldman, M.A., *Lecturer*

This course has become the standard introduction to the discipline. Its purpose is to survey the components of political science. At the same time the course offers an introduction to analytic tools used. The broad range of the subject may limit the penetration in the various areas, but it provides a good insight into the concerns of a political scientist. However, its value goes beyond that, since most advance courses require this introduction.

Tuesday and Thursday, 6:00–9:00 p.m.

HISTORY

THE COLD WAR

HIST.—S.150

Robert J. Smith, M.A., *Lecturer*

An analysis of the conflict between the Soviet Union and the United States. Lectures and discussions will attempt to clarify the various aspects of the origins and development of the Cold War since World War II.

Monday, Wednesday and Friday, 7:00–9:00 p.m.

AMERICAN HISTORY TO 1850

HIST.—S.133

Gerald W. Gawalt, M.A., *Lecturer*

A survey of the history of the United States from its first foundations. Emphasis will be placed on the American colonies and the Puritan heritage, the Revolution, the Federalist era, Jeffersonianism, the phenomenon of Jacksonian democracy, and the antebellum period.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

MODERN SOCIALISM

HIST.—S.206

Tim McCarthy, *Lecturer, University of Massachusetts*

The aim of this course will be to examine socialism as a critique of and alternative to the capitalist organization of the industrial society. After developing the classical Marxian conception of socialism, the focus of the course will shift to contemporary theorists, particularly Herbert Marcuse.

Tuesday and Thursday, 6:00–9:00 p.m.

MATHEMATICS

FUNDAMENTALS OF MATHEMATICS

MATH.—S.11b

Robert H. Perry, M.A., *Lecturer*

See description under Interession. Prerequisite: S.11a.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

INTRODUCTORY CALCULUS

MATH.—S.12b

Bernard Howard, M.A., *Lecturer*

See description under Intersession. Prerequisite: S.12a.

Monday through Friday, 9:15–10:25 a.m.

MUSIC

INTRODUCTION TO ELECTRONIC MUSIC

MUS.—S.120

Wesley M. Fuller, M.Mu., *Associate Professor of Music*

The course will proceed in two ways by tracing the history and development of electronic music and actual laboratory work in the Clark University Electronic Music Studio. The course is designed to introduce some of the methods, accomplishments, problems and potentials of electronic music. The course will be flexible enough to allow the pursuit of special interests. For example, a teacher might want to explore the way in which electronic music could be worked into a music curriculum. It is not a composition course. Students who are interested in composing and qualified to do so, may make special arrangements with the department. Prerequisite: An introductory course in music or permission of instructor.

Tuesday and Thursday, 9:30–12:30 p.m.

A SURVEY OF MUSICAL STYLE

MUS.—S.130

Relly Raffman, A.M., *Professor of Music,
Chairman, Department of Music*

A study of the development of musical style in western society from the early Christian era to the present. Selected masterpieces of vocal and instrumental literature will be studied through the use of scores and recordings. Although a knowledge of music fundamentals is helpful, it is not a prerequisite. Outside reading will be kept to a minimum; the course lectures will generally cover the important technical and historical highlights, freeing the student to concentrate on the listening experience.

Monday through Friday, 10:30–11:40 a.m.

PHILOSOPHY

ORIENTAL PHILOSOPHY

PHIL.—S.120

Changboh Chee, Ph.D., *Associate Professor in Sociology and Anthropology,
Long Island University*

A study of the philosophical and religious foundations of the ways of thinking of the Oriental peoples by discussing the essences of Oriental mythologies, philosophies and religions such as Hinduism, Buddhism, Taoism, Confucianism, Zen Buddhism, etc., and their influences upon the ways of thinking, aesthetic attitudes and social institutions of the societies.

Monday through Friday, 10:30–11:40 a.m.

PSYCHOLOGY**THE PSYCHOLOGY OF DREAMS, MYTHS AND SYMBOLS** PSY.—S.126Bernard Kaplan, Ph.D., *Professor of Psychology*

A critical examination of various theories of symbol-formation with special emphasis on the origins, structures and functions of dreams and myths. The relation of dream formation to psychopathology and the recent work on the physiological bases of dreaming will also be discussed. Prerequisite: Consent of the instructor. Psychology of language desirable but not necessary.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

INTRODUCTION TO CHILD PSYCHOLOGY PSY.—S.150bJames D. Laird, Ph.D., *Assistant Professor of Psychology*

See description under Intercession.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

PSYCHOLOGY, PSYCHOANALYSIS AND THE STUDY OF MAN PSY.—S.156Robert B. Brooks, *Lecturer*

The course focuses on basic psychoanalytic concepts as they were developed by Sigmund Freud with special emphasis given to Freud's theories of (1) psychosexual-aggressive development, (2) anxiety, (3) the structure of the mind, (4) mental illness, and (5) civilization and the malaise of modern man.

Tuesday and Thursday, 6:00–9:00 p.m.

SOCIOLOGY**SEMINAR IN SOCIAL ACTION** SOC.—S.268Stanford N. Gerber, Ph.D., *Assistant Professor of Sociology*

A critical evaluation of anthropological, sociological, and literary sources and their applications to contemporary social problems. *Limited to 15 students.*

Monday, Wednesday and Friday, 6:00–8:00 p.m.

RADICAL RELIGION IN THE 20TH CENTURY SOC.—S.201Charles W. Estus, Ph.D., *Assistant Professor of Sociology,*
Assumption College

An examination of emergent forms of Christianity and Judaism and those social, economic, political, and cultural factors in the 20th century which appear related to such new forms. Attention will be given to national and international crises—precipitated by racism, poverty, technology, militarism, neo-colonialism, the cold war, and the third world—as they relate to the theologies of the left as well as those of the right. Special consideration will be given to the death-of-God and revolutionary theologies.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

SOCIAL CONTROL AND SOCIAL SYSTEMS

SOC.—S.257

Frederick W. Killian, LL.B., *Associate Professor of Sociology*

A current and updated analysis, mainly, of three social systems (institutions) in the U.S., namely, political, religious and legal, in the context of "systems analysis," "decision-making," and "feedback systems." For students of the behavioral sciences or those interested. Emphasis on: *control, social relations, function, structure and model theory, and probability systems*. No prerequisite. *Limited to 15 students*. A seminar course; class reports, three examinations, no term paper.

Monday through Friday, 9:15–10:25 a.m.

COMPARATIVE SOCIAL INSTITUTIONS

SOC.—S.145

Stanford N. Gerber, Ph.D., *Assistant Professor of Sociology*

Cultural variations of selected institutions and social groupings. Data is drawn from such regions as the Caribbean, Melanesia, Micronesia, Russia, China, Africa and the United States.

Monday through Friday, 10:30–11:40 a.m.

THEATER ARTS

SCREEN EDUCATION IN THE SCHOOL

T.A.—S.222

Lawrence A. Larson, S.T.B., M.S., *Lecturer*

A course designed to assist elementary and high school teachers to develop a philosophy of screen education (TV and film), and to determine its place in the school curriculum. Included in the course will be the study of: the screen, its effects and functions in the lives of students, film types, student films, film production in the school, resources in screen education and the utilization of the screen in classroom teaching.

Tuesday and Thursday, 6:00–9:00 p.m.

PLAY PRODUCTION FOR COMMUNITY AND SCHOOL

T.A.—S.118

Edward J. Herson, *Lecturer*

More general than Introduction to Play Directing, this course aims to give the school director and the community theater actor, director, and general participant an intensive survey of: (1) the elements of production, (2) general production procedures and (3) some special production procedure techniques. The course is conducted by lecture-discussion and includes no practical laboratory requirements.

Monday, Wednesday and Friday, 8:00–10:00 p.m.

THE SUMMER SCHOOL

Late arrivals, 1969

INTRODUCTION TO THE HUMANITIES

F.A.-S.10 ✓

Paul C. Deane, Ph.D., Assoc. Prof., Bentley College

This course will discuss the nature, function, and basic methods of the arts; important art movements, such as Classicism, Romanticism, Abstraction; and the way specific works of art reveal aesthetic principles and comment on the human condition.

Intersession: June 9-July 3, MWF, 6:00-9:00 p.m.

MAJOR TRADITIONS IN WESTERN THOUGHT

PHIL.-S.120 ✓

Howard B. Jefferson, President Emeritus

This course will study the Greek and Hebrew backgrounds of philosophical and religious ideas in Western civilization.

Summer Session: June 30-August 16, M-F, 10:30-11:40 a.m.

AN INTRODUCTION TO THE MEANING AND STRUCTURE OF PHYSICS

PHY.-S.18 ✓

Joseph P. McEvoy, Ph.D., Ass't. Prof. of Physics

A course designed for those with no special technical abilities or pretensions, to provide an introduction to the drama in the creation of physics and the power in the results. The course will be unique in the sense that the student will be made aware of the elegance and consistency of the subject. No prerequisite.

Summer Session: July 7-August 16, TTh, 6:00-9:00 p.m.

PEOPLES OF THE WORLD

SOC.-S.12 ✓

Paul A. Erickson, B.A., Lecturer

An introductory course in Cultural Anthropology designed to acquaint students comparatively with a selection of peoples and culture different from our own as an aid to objective analysis of contemporary society and as a basis for useful generalizations about human social behavior. A foundation course for advanced work in Sociology. *No day school credit.*

Summer Session: July 7-August 16, MWF, 8:00-10:00 p.m.

CREATIVE THEATER FOR CHILDREN

T.A.—S.117

Phillip Graneto, *Lecturer, Fenwick Theater*

A course suggesting methods for creating plays for and with children with an emphasis on mimetic rather than verbal drama leading students, it is hoped, toward ideas for new scripts and new methods of production.

Monday, Wednesday and Friday, 6:00–8:00 p.m.

THE PRINCIPLES OF FILM ART

T.A.—S.160

Rev. Gene D. Phillips, S.J., *Lecturer, Fordham University*

An analysis of the elements that make up the film experience: direction, acting, editing, etc., with a view to their integration into the artistically successful film. The relation of film to drama and fiction will also be studied. Short films will be used as illustration.

Monday, Wednesday and Friday, 7:00–9:00 p.m.

COURSE SCHEDULE

INTERSESSION—DAYS—JUNE 9—JUNE 28—All classes meet twice daily 9:00 a.m. and 2:00 p.m. with the exception of Directed Study in Yeats and Joyce and the Art Studio Workshop

Bio. —S.270	General Biochemistry	Brink
Bio. —S.15	Marine Botany	Johansen
Bio. —S.17	Field Ecology	Hutchinson
*Eng. —S.200	Directed Study in Yeats and Joyce	Sultan
**F.A. —S.100	Art Studio Workshop	Murphey
Ger. —S.10	Basic German for Reading	Schatzberg
Sp. —S.120	Comparative Literature: Don Juan Legend	Barbera
Fr. —S.100	Beginning French for Reading Knowledge	Willis
Math.—S.12a, b	Introductory Calculus	Howard
Mus. —S.114	Introduction to Non-Western Music	Fuller
Phil. —S.14b	Nineteenth Century German Philosophy	Wright
Psy. —S.11a	General Psychology	Stein

*Directed Study in Yeats and Joyce has its own calendar—outlined in the course description.

**Art Studio Workshop runs through July 3.

INTERSESSION—NIGHTS—JUNE 9—JULY 3—All classes meet Monday, Wednesday and Friday, 6:00–9:00 p.m. with the exception of Civil Disobedience

B.A. —S.20a, b	Business Law	Smith
B.A. —S.117a, b	Principles of Accounting	Strobel
B.A. —S.16a, b	Business Statistics	Kelley
Ec. —S.111a	Principles of Economics	Michalopoulos
Ec. —S.113	Money and Banking	Savage
Ed. —S.208	Methods and Materials in Secondary Education	Gordon
Eng. —S.11a, b	English Composition and Literature	Martin
Eng. —S.213	Shakespeare	Anderson
F.A. —S.155	Michelangelo and the High Renaissance	Cowardin
Hist. —S.241a	Origins of World War I	Smith
Hist. —S.141	Modern American Social Reform	Worsley
Math.—S.11a, b	Fundamentals of Mathematics	Perry
Psy. —S.125a	Psychology of Language	Kaplan
Psy. —S.150	Introduction to Child Psychology	Laird
Psy. —S.11a	General Psychology	Stein
Psy. —S.215	Psychology of Learning	Stevens
*Soc. —S.50	Civil Disobedience	Blinderman

*Taught on Monday, Wednesday and Friday, 6:30–8:30 p.m.

SUMMER SESSION—(Day Classes)—JULY 3—AUGUST 16
8:00–9:10 a.m. Monday through Friday

Geo. —S.200a	Geography: Factors and Concepts	Warman
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9:15–10:25 Monday through Friday

Ec. —S.291	Special Topics in Human Resources	Bryce
Eng. —S.18	Expository Writing	Britt
Eng. —S.10a	Introduction to Literature	Clark
Math.—S.12b	Introductory Calculus	Howard
Soc. —S.257	Social Control and Social Systems	Killian
Gov. —S.206	Black Political Thought	Rasmussen

10:30-11:40 a.m. Monday through Friday

Gov. —S.230b	Urban Government and Politics	Nichols
Mus. —S.130	A Survey of Musical Style	Raffman
Soc. —S.145	Comparative Social Institutions	Gerber
Phil. —S.120	Oriental Philosophy	Chee

11:45-12:55 p.m. Monday through Friday

Bio. —S.250	Introduction to Immunology and Immuno-chemistry	Rosenkrantz
Eng. —S.216	Black in Literature	Britt
Eng. —S.128	Anger and After: Contemporary British Drama	Clark
F.A. —S.11	Introduction to Western Art	Baker
Geo. —S.110	African Culture	Stewart

10:25-11:40 a.m. Monday, Wednesday and Friday

Eng. —S.240	Introduction to Linguistics	Heller
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12:00-1:15 p.m. Monday, Wednesday and Friday

Eng. —S.255	The Structure of Modern American English	Heller
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9:30-12:30 p.m. Tuesday and Thursday

Ed. —S.203	Curriculum Development in Secondary Education	Weiser
F.A. —S.105	Introduction to Drawing, Painting and Design	Graziani
Mus. —S.120	Introduction to Electronic Music	Fuller

SUMMER SESSION—(Evening Classes)—JULY 7-AUGUST 16

6:00-10:00 p.m. Monday, Wednesday and Friday

*B.A. —S.220a, b	Analysis of Business Problems	Shapiro
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*Double course.

6:00-8:00 p.m. Monday, Wednesday and Friday

Eng. —S.106	Contemporary American Fiction	Beard
T.A. —S.117	Creative Theater for Children	Graneto
Gov. —S.190	American Political System	Nichols
Math.—S.11b	Fundamentals of Mathematics	Perry
Soc. —S.268	Seminar in Social Action	Gerber
Eng. —S.11b	English Composition and Literature	Martin

8:00-10:00 p.m. Monday, Wednesday and Friday

B.A. —S.16b	Business Statistics	Kelley
Eng. —S.233	Poe, Hawthorne and Melville	Beard
T.A. —S.118	Play Production for Community and School	Herson
Hist. —S.133	American History to 1850	Gawalt
Psy. —S.126	Psychology of Dreams, Myths and Symbols	Kaplan
Psy. —S.150b	Introduction to Child Psychology	Laird
Soc. —S.201	Radical Religion in the 20th Century	Estus

7:00-9:00 p.m. Monday, Wednesday and Friday

T.A. —S.160	The Principles of Film Art	Phillips
Hist. —S.150	The Cold War	Smith

6:00-9:00 p.m. Tuesday and Thursday

B.A. —S.20b	Business Law	Smith
B.A. —S.117b	Principles of Accounting	Strobel
T.A. —S.222	Screen Education in the School	Larson
F.A. —S.190	Arts of the Far East	Chee
Gov. —S.159a	Introduction to Political Science	Goldman
Hist. —S.206	Modern Socialism	McCarthy
Psy. —S.156	Psychology, Psychoanalysis and the Study of Man	Brooks

6:00-10:00 p.m. Monday and Thursday

*B.A. —S.295a, b	Statistical Analysis	Sargent
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*Runs from June 2 to August 1.

6:00-8:00 p.m. Monday and Thursday

B.A. —S.340	Marketing Research	Balko
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6:00-8:00 p.m. Tuesday and Friday

B.A. —S.370	Policy Formulation and Administration	Balko
B.A. —S.330	Managerial Economics	O'Hara

8:00-10:00 p.m. Tuesday and Friday

B.A. —S.299	Production and Marketing Management	O'Hara
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PREREGISTRATION FORM

Please complete this form and send it with a fee of \$5.00 to:

Summer School, Clark University, 18 Downing St., Worcester, Massachusetts

Name: _____ Soc. Security # _____
Last First Middle

Address: _____ Sex: _____ Male _____ Female
 Number Street

City _____ State _____ Zip _____ Marital Status: _____ single
married

If veteran seeking benefits of G.I. bill please check: _____ PL 550
 _____ PL 894

I would like a dormitory room (\$10.00 deposit required) _____single
 _____double

Check One: (colleges attended)

_____Clark: _____day _____Other Institution:
_____evening

Name: _____

Address: _____
City State

[illegible]

The deadline for Intersession preregistration is May 1 and for Summer Session preregistration, June 1. You may also register in person at Clark on Monday, June 9, for Intersession, day and evening; Monday, June 30 for Summer School day classes; and Monday, July 7 for Summer School evening classes.

Interession—				
Dept. Name	Course #	Crs.	Course Title	Instructor

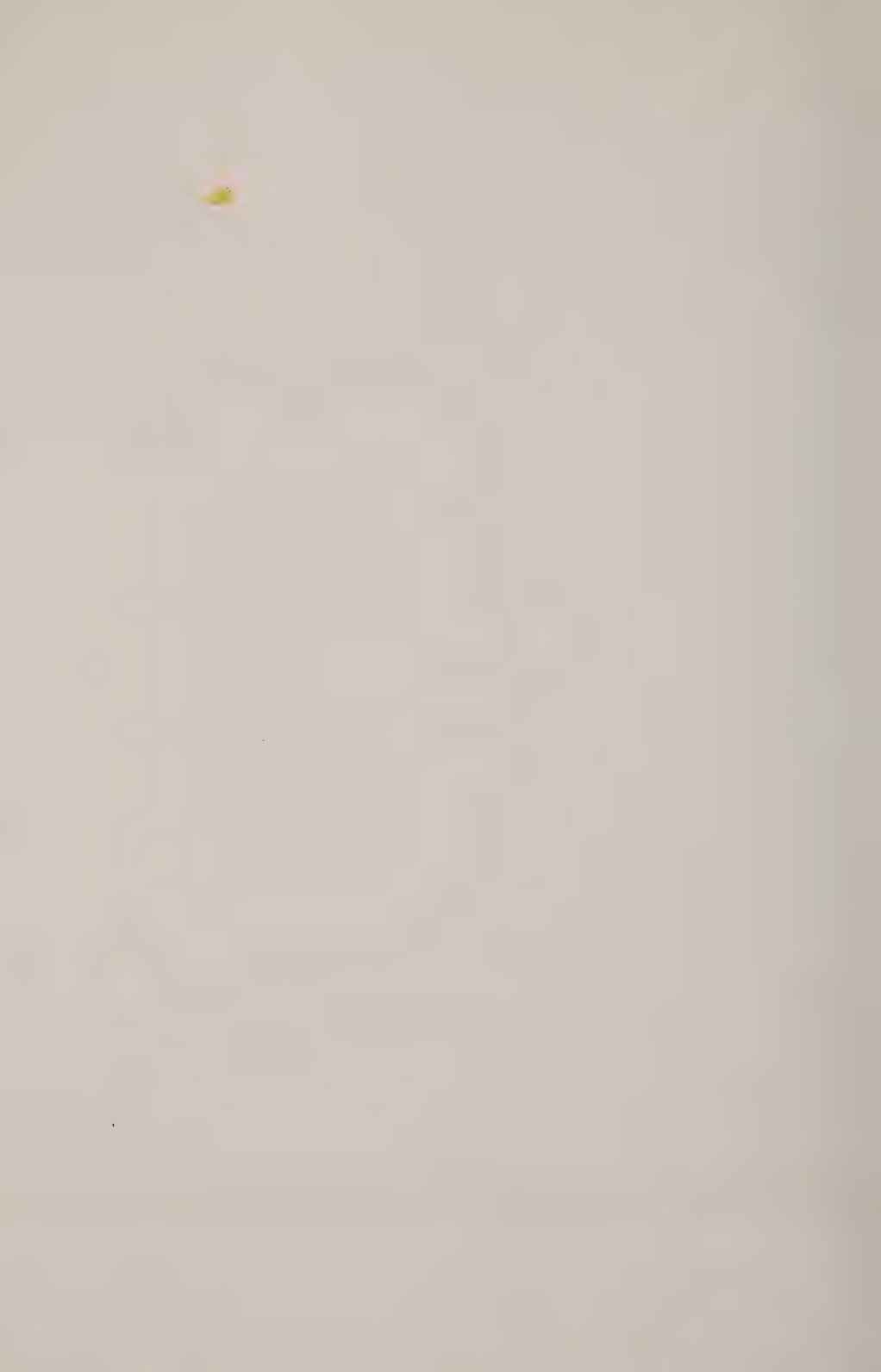
Summer Session—				
Dept. Name	Course #	Crs.	Course Title	Instructor

Enclosed: \$5.00 fee for preregistration, applicable to tuition but non-refundable. \$10.00 dormitory deposit



SEVENTY-EIGHTH
ANNUAL COMMENCEMENT
CAMPUS GREEN
SUNDAY, JUNE 2, 1968

CLARK UNIVERSITY
WORCESTER, MASSACHUSETTS



ORDER OF EXERCISES

Processional March from "Le Prophete" *Meyerbeer*
 Grand March from "Aida" *Verdi*
 Pomp and Circumstance *Elgar*

Invocation The Reverend Duane A. Cossart
 Minister,
 Pilgrim Congregational Church,
 Worcester

Welcome by the President Dr. Frederick H. Jackson

Commencement Address John W. Gardner
 Chairman,
 The Urban Coalition

Conferring of Degrees President Jackson

Alma Mater
 Fiat Lux (Stanzas I and III)

Benediction The Reverend Duane A. Cossart

Recessional Trumpet Voluntary *Purcell*

Guests are requested to remain beyond the roped areas and not to obstruct the view of other guests attending this ceremony.

EVENING COLLEGE CANDIDATES FOR THE DEGREE OF
BACHELOR OF FINE ARTS

Mary Ann Dolores Baublis
Blair J. Lariviere

EVENING COLLEGE CANDIDATES FOR THE DEGREE OF
BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Francis Joseph Andrews	Siegfried Emil Meyer
Glenn Anthony Ford	Marc J. Michalski
Francis Lawrence Fryer, Jr.	*Stephen Carey Orrell
Thomas E. Gagliastri	Gerard M. Paquette
Robert William Gray	Paul Peter Paquin
Emmett Joseph Kane	Robert Adolph Rondeau
Arthur Charles Klebart	Gildo Mario Rotondo
Stanley Henry Larson	Richard Jay Silverman
Dennis Patrick Leonard	David Lincoln Smith
John Everett Lindberg	*Norwood L. Spaulding
Joseph Gerard Losurdo	Walton Frederick Stockwell
William Edward Mau	*Russell F. Stone
William F. McMahon, Jr.	*Richard Charles Valinski
John Curtis West, Jr.	

EVENING COLLEGE CANDIDATE FOR THE DEGREE OF
BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION
WITH HONORS

Summa Cum Laude
Lawrence Holsborg

EVENING COLLEGE CANDIDATES FOR THE DEGREE OF
BACHELOR OF SCIENCE IN GENERAL STUDIES

Margaret Carole Amsden	*David Fletcher Gordon
*Marilyn Gail Brooks	John Myles Kalagher
Robert E. Brown	Raymond Harold LaBrie
Andrée Marie-Louise Cassavant	Paul James Lucey
Jacqueline Betty Chance	Alaric Ræ Mills
*Virginia E. Curcio	Paul Francis Murphy
Andrew Wilbur Dahl	Robert E. Ojala
Robert Kevin Dand	*Athena Pappas
*Douglas Bryant Downer	*Jerry Bland Ray
Anne Spiewak Ducharme	Norman Thomas Sheridan
William Francis Gallagher	Mari-Liis Smyth
Elizabeth Ann George	Russell Fredrick Swenson
Kenneth Eric Whatmore	

*As of June 4, 1967

EVENING COLLEGE CANDIDATES FOR THE DEGREE OF
BACHELOR OF SCIENCE IN GENERAL STUDIES
WITH HONORS

Cum Laude

Ronald MacKenzie Boucher
Bette Jean Warren

Magna Cum Laude

Winifred Volkhausen

CANDIDATE FOR THE DEGREE OF BACHELOR OF SCIENCE
IN BUSINESS ADMINISTRATION

Bruce Everett Anderson

CANDIDATES FOR THE DEGREE OF BACHELOR OF ARTS

Clifford Nelson Abelson
Doris Louise Altarescu
Carol Marsha Andelman
Fred Steven Anton
Christine Julia Armond
Diane Claire Bailey
Theodore Raymond Barbera
*Walter R. Barys, Jr.
Jonathan Sheffield Baum
Lynda Rosenfeld Baydin
Christopher Alan Bayer
Mark Charles Beal
Jay Harold Beder
Roy Eliot Belson
Jeffrey C. Benezra
Mark Aaron Berezin
Steven Albert Bergquist
Miriam Gale Bergstein
Lee Jerold Berkowitz
Michael Paul Bibbo
Karl Fredrick Bishop
Mark Allen Blaustein
Marguerite Marie Brault
*Diane E. Breakell
*Carole Ann Budzinski
Deirdre Carroll Burke
Susan Ellen Burns
Bruce Gilbert Butterfield
Phyllis Elaine Cary
James William Case

Eric Elliot Caslow
Richard Alexander Cella
*Robert John Clarke
Donna E. Cohen
Michael Alan Cohen
Robert Morris Cohen
*Karla B. Cohn
Dorothy Ann Cole
Michele Honore Cottler
Dina Bischoff Davis
Patricia Ellen DeGroat
David DePaul
Teresa Ann Diamond
*Roy B. Dion
Barbara May Dowd
Charles Newbert Dragonette
Raymond G. Dugas
Linda Louise Dumelin
Helen Miriam Leos Epstein
Neal David Epstein
Joseph Kenneth Esper
*Suzanne S. Fagan
Pauline Lydia Fairservice
Patricia Ann Farwell
Leslie Jo Finkel
Joan Maxine Forrester
Walter Benjamin Frankel
Debora Ann Frauwrith
Cynthia Ann Frederick
Martha Reich Freirich

*As of June 4, 1967

Robin Sue Fried	Margaret Anne Lines
Harvey William Fritz	Richard Jonathan Lipsky
G. Michael Fultz	Frederick Pomeroy Logan, Jr.
Linda Harriet Garbus	Forbes Martin Madzongwe
Henry Joseph Gardner	Diane Dymek Mahan
Barry Kenneth Gassman	A. David Maki
Marcia Ann Gazorian	*Philip J. Maniaci
Ellen Hart Geiss	Kenneth Paul Marggraff
Elena Alice Gil	Joyce Katherine Mason
Kristin Lynette Gill	Margert Ellen Maurer
Betty Ann Gittes	Anthony Leo McCall
Michael Lewis Glass	Clairejanice Adrienna McConnell
James Bruce Gordon	Theodore Richard McElwee
Renée Ann Gordon	Bruce Leonard Meisner
Deidre Ann Goulding	David Seth Mishkin
Linda Ruth Graetz	*Dianne Senter Mogul
Joseph Michael Graziadei	Georgia Dorothy Montouris
George Robert Hanley	Angela Georgette Mooallim
*Christopher P. Harris	Douglas Andrew Morehouse
John Heard, Jr.	Jeffrey Denis Morelli
Phyllis R. Hebert	Linda Naomi Muskat
Amos Harold Heckendorf	Stephen Jay Myers
Rosalyn G. Hevenstone	Doreen Janice Myhaver
Klaus Günter Hlousek	Jeanne Mary Najemy
*Josephine Lan-chun Hung	Karen Elizabeth Nathans
Lucy Eleanor Hurley	Ruthe Lois Norman
Loismay Conn Hurowitz	Deirdre Anne O'Donoghue
Beverly Susan Hurwitz	Thomas O. Panaccione
Michael David Isaacson	Jeffrey Charles Pattee
Donna A. Ives	Richard Wilbur Payne, Jr.
*Emily L. Jahn	Patricia Elaine Pease
Penelope Johnson	Barbara Rae Pinsker
David Arthur Jones	Kenneth Wayne Poirot
Kitty Igmantha Gayle Jones	Joseph Poracsky
William Arthur Jones	*Jeffrey Harold Posner
Stephen Alan Josephs	Jack Bernard Pransky
*Lydia Kapule	Ruth Carol Rakosky
Jeffrey Ira Katz	Daniel Anthony Ranalli
Edward Barry Kaufman	Theophilos Raptis
Karen Gladstone Kibbett	Elena Ann Reingoldas
James D. King	*Roberta Buck Rhee
Robert Alan Kirsch	Jeffrey Clark Rider
Thomas Wesley Kolterjahn	Steven R. Rolnick
Louis Richard Kornetsky	William Edward Rosner
Ruth Adeline Kruczynski	Franklin D. Ross
Stephen Joseph Krysiak	William Bochert Rubins
Dan Alan Kushel	Simon Robert Ruderman
Terese Ann Marie Lally	Paul Vincent Rutledge, Jr.
*Charles J. Lavoie	Howard Edward Sachar
Peter Gerald Leach	Roland James St. Hilaire
Robert Phillip L'Esperance	Philip Thomas Salerno
Jeffrey D. Levine	Joseph Stuart Savage
Howard Seth Levy	Todd Douglas Schaible
Mark Levy	Judith May Schneider

Ronna-Lee Schneider
Robert L. Schueler
Steven Leslie Segall
Betheda R. Shuman
Judith Ann Skenazy
Charles Emanuel Sloane
Alan Forrest Smith
Randall Lee Smith
David Wayne Snow
K. Alton Spencer, Jr.
Paul David Spofford
Robert E. Stacey
Laura Sue Steinberg
Phyllis Stoltz
Margery C. Stone
Stephen Nicholas Stoyanoff
*Jon Carl Straight

Virginia R. Tartakoff
Thomas Otto Taussik
Linda Carolyn Teixeira
Frank Homer Tetreault, Jr.
Deborah Ann Tobin
Ralph Richard Trinqué
*Joel Steven Walter
Donald C. Warner
Thomas W. Watson
Jean Weichman
Penny Kirsch Wein
Sandra Adnoff Wein
Sanford Roy Wert
James R. White
June Ann White
Raymond Thomas Yarnall
David John Zaido

Charles Zerner

CANDIDATES FOR THE DEGREE OF BACHELOR OF ARTS WITH HONORS

Departmental Honors

Alan Richard Cutler, *Chemistry*
Joan Tanzer Frank, *Sociology*
Natalie Jeanne Goldberg, *Psychology*
Herbert Chandler Healy, *Physics*
Wendy Gerzog Knowles, *English*
James Helmut Leibfarth, *High Honors, Chemistry*
Carolyn Mary Long, *Sociology*
Brian Leslie Mishara, *Psychology*
Arthur Howard Patterson, *Psychology*
Leon Joseph Schofield, Jr., *Psychology*
Kathleen Mary Shea, *History*
Janet Beth Siegler, *English*

Cum Laude

David Anton Ballan
Beverly Anne Blaine
Marcia Rae Bryer
Karen S. Coen
Paul Gunnar Erickson, *and with High Honors in Economics*
Gerald Michael Farmelant, *and with Honors in Psychology*
Daniel Paul Finkelman
Nancy Noble Gardner

*As of June 4, 1967

Jane Alice Gogol
Karen Louise Hancock
Marjorie Irene Hastings
Helga Pauline Hautaniemi
Linda Josephine Hjelm
Marcus Joseph Horn, *and with Honors in Chemistry*
Robert George Kinosian, *and with Honors in Physics*
Barbara May Koch
Bonnie Julia Kossoff
Phyllis Joan Krakauer
Alan Howard Mass
Stephen Bruce Novak
Robert Peter Pisarski
Judith R. Silver, *and with Honors in Psychology*
Ronald Jeffrey Sterling
Ruth Evelyn Tarbox
John Louis Weichsel
David Steven White
Edward Lewis White

Magna Cum Laude

Arlene Sandra Abramson
Eileen Carol Brodsky
Barry Alan Chafitz, *and with Honors in International Relations*
Richard John Cunningham, Jr., *and with Highest Honors in Philosophy*
Lucille Anita Galipeau, *and with High Honors in Biology*
Neal Morse Goldberg, *and with Highest Honors in Government*
Michael Martin Katz, *and with Honors in Psychology*
Neil Bruce Kitrosser
Judith Ellen Plaskow
Edward C. Primeau
Frank Paul Tully, *and with High Honors in Chemistry*

CANDIDATES FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

William Edward Aubuchon, III	Richard Francis Falvey
Andrew Michel Beaudoin	Ronald Richard Jalbert
Warren N. Blaisdell	Henry Thomas O'Hara
Peter Anthony Chiasson	David Arnold Sawin
David Irving Cook	John Anthony Wake
Robert Paul Engvall	Gordon Louis Wallat

CANDIDATES FOR THE DEGREE OF MASTER OF ARTS IN EDUCATION

Richard Wilder Branting	Lawrence Anthony DeJohn
Philippa Jeanette Carrington	Ronnie Jill Freed
Bradford William Carroll	Diane Henderson
J. Melvyn Clemons	Paul Styring Higgins
Paul Francis Cloutier	Eleanor Crockett Hutchinson
Joan Lumena Croft	Robert James Jackson

Attila Kariko
Lise M. LaForce
James Gilbert Lovell
Jill M. McGrath
John Delafield Nordstrom
Charles Henry Peix, Jr.

Marilyn Ethel Peterson
James Franklin Plotner, Jr.
Leonard Holmes Spencer
Clara May Takesian
Donna Hamil Talman
Dario Valdés Espinosa
Robert J. Zabek

CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

Biology

Lorraine Mary Griffin
Thomas Bassett Kinraide
Gayle Penniman Orczyk
Douglas Lees Schmucker
Mark Charles Segal

John Bixlee Hench
Richard Carney Higgins
Jane Wirth Lefkowitz
Gordon Meade Marshall
John F. Meyers

Chemistry

Jean Kennedy

Mathematics

Donald A. Bacon
D. Michael Deeley
Richard Glee Montgomery
John Francis Mooney
Moiz Mutlu
Edward Joseph Stefanini
Laura Deming Stevens

Economics

Emin Cariki
Hakchung Choo
Luc De Wulf
Robert Kenneth Jordan, Jr.
William B. O'Connell
Raymond Alphonse Pepin
Kenneth Douglas Reinfeld
Louise J. Rundstrom

Physics

Sergio Franco
Carol Loughlin Mainville
Edward Stanley Nartowitz
James Alfred Reilly

Geography

Chelvadurai Manogaran
James E. McCormick
Russell Walter Muncaster
Frederick Edward Oxtoby
Ali Asghar Pourabbas
Suk-Han Shin
Carl Niels West
Gary Thomas Whiteford

Psychology

David J. Bearison
Marjorie Rosenman Clegg
Alice Sheppard Groch
Marc Kashinsky
Roy Alan Kochendorfer
Martin B. Leichtman
Lester Alexander Mindus
Jeffrey Joel Rosen

History, Government, and International Relations

M. Susan Burns
Gerard W. Gawalt

Sociology

Paul Alan Erickson
Daniel Paul LeClair

CANDIDATE FOR THE DEGREE OF DOCTOR OF EDUCATION

Spencer Romeyn Potter

CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Biology

Cecil H. Fox

Theodore Peter Cannutz

Peter Ayers Nickerson

History, Government, and International Relations

Carol Harting Wilcox

Chemistry

Chun-meei Lee Chen

Theodore Clifford Crusberg

John Hui-hsiung Hung

Mathematics

James Joseph Walter Kaput

Chemical Physics

Peter Demerton Yedinak

Physics

Raymond Charles DuVarney, Jr.

Economics

Thomas Anthony Manion

James Moniz

Psychology

A. Harvey Baker

Ward Jay Cromer

Marion Hall Glick

Edith Freund Kaplan

Paulette Lebensfeld

Paul Jules Meisel

Dvura Rosenbach

Donelda Lane Stayton

Lonnie Edward Supnick

Geography

Duane Dennis Baumann

Paul Roland Beaudet

George Thomas Downey

Roy Jackson Fletcher

Fredric Arnold Ritter

CONFERRING OF HONORARY DEGREES

PRESTON EVERETT JAMES

Presented by Saul Bernard Cohen

Doctor of Laws

SUSANNE KNAUTH LANGER

Presented by Jefferson A. White

Doctor of Humane Letters

JEAN PIAGET

Presented by Seymour Wapner

Doctor of Science

GEORGE WALD

Presented by Vernon Ahmadjian

Doctor of Science

JOHN WILLIAM GARDNER

Presented by Mrs. Milton P. Higgins

Doctor of Laws

FIAT LUX

Words by
E. L. Clarke, '09

Music by
R. F. Fletcher, '10

Oh Clark! Thy sons have gathered
To thee from east and west,
To pledge with deep devotion
The college they love best.
They love thy halls and campus,
Each comrade of their heart
The memories, aims, traditions
That make thee what thou art.

Hail Clark! We who revere thee
Salute thee with a cheer!
While we shall live we'll praise thee.
Oh college without peer!
Only with life shall perish
Thy name and memory bright,
Thy sons shall ever cherish
The scarlet and the white!

Godspeed our Alma Mater,
And may she ever be
The leader of the leaders,
The freest of the free!
Her sons shall still press onward,
The foremost in the fight,
Till everywhere her watchword
Shall ring, "Let there be light!"

1968

EVENING COLLEGE

Bachelor of Fine Arts	2
Bachelor of Science in Business Administration	28
Bachelor of Science in General Studies	<u>28</u>
TOTAL	58

DAY COLLEGE

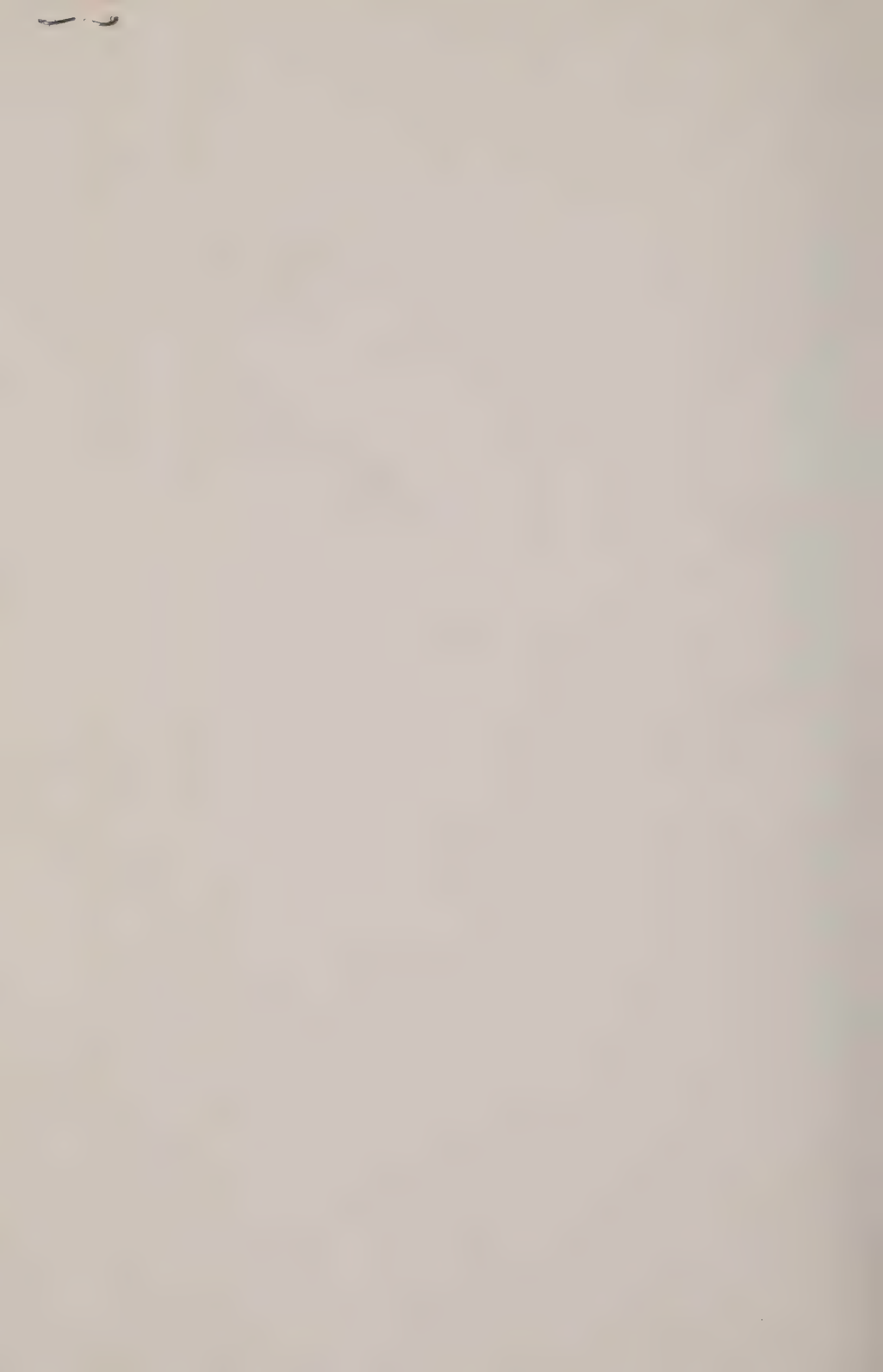
Bachelor of Science in Business Administration	1
Bachelor of Arts	<u>256</u>
TOTAL	257

GRADUATE SCHOOL

Master of Business Administration	12
Master of Arts in Education	25
Master of Arts	49
Doctor of Philosophy	26
Doctor of Education	<u>1</u>
TOTAL	113

TOTAL OF TOTALS

428





SEVENTY-NINTH

ANNUAL COMMENCEMENT

CAMPUS GREEN

SUNDAY, JUNE 8, 1969

CLARK UNIVERSITY
Worcester, Massachusetts

SEVENTY-NINTH ANNUAL COMMENCEMENT

ORDER OF EXERCISES

Processional	March from "Le Prophete" <i>Meyerbeer</i> Grand March from "Aida" <i>Verdi</i> Pomp and Circumstance <i>Elgar</i>
Invocation	Rabbi Joseph J. Gold <i>Shaarai Torah West Synagogue,</i> <i>Worcester</i>
Welcome by the President	Dr. Frederick H. Jackson
Commencement Address	Richard P. Wilbur <i>Professor of English</i> <i>Wesleyan University</i>
Conferring of Degrees	President Jackson
Alma Mater	
Fiat Lux (Stanzas I and III)	<i>Inside Back Cover</i>
Benediction	Rabbi Gold
Recessional	Trumpet Voluntary <i>Purcell</i>

Guests are requested to remain within the roped areas and not to obstruct the view of other guests attending this ceremony. Photographs may be taken only from the special area roped off for this purpose to the right of the platform.

EVENING COLLEGE CANDIDATE FOR THE DEGREE OF
BACHELOR OF FINE ARTS

*Elsa Melissa Hawkins

EVENING COLLEGE CANDIDATES FOR THE DEGREE OF
BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Richard Francis Astrella
Leo Paul Bourgault
Kenneth Earl Bujold
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Robert V. Casavant
Donald Woodman Conant
Frederick Stephen Cook
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Alfred Paul Zaterka

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Marion Minnie Pinkham
Cynthia Robertson
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Constance Ledoux Taylor
*Theresa G. Tersa
Marion Bonar Wilson

EVENING COLLEGE CANDIDATE FOR THE DEGREE OF
BACHELOR OF SCIENCE IN GENERAL STUDIES WITH HONORS

Magna Cum Laude

Janice Louise Hammond

CANDIDATE FOR THE DEGREE OF BACHELOR OF SCIENCE
IN BUSINESS ADMINISTRATION

Korn Dabbaransi

*As of June 2, 1968

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Karen Ann Holmgren
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 John I. Keith
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 Phyllis Ann Kinsler
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 Jon Damian Sheridan Knowles
 Vesna Kornicer
 BettyAnn J. Koslak
 Marshall Gerald Kovitz
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 Rodney Joseph LaBrecque
 Sharon Jean Lachapelle
 Linda Marie Lalla
 Patricia Anne Lambe
 John Charles Larsen
 Kathrina Marie Larsen
 Pablo Lawner
 Kathleen Kay Lawrence
 William J. Lehtola
 *Tamara Levi
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 Peter Boguslaw Loewenberg
 Richard Ward Loudis
 JoAnne Sheridan Lund
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 Noah Andrew Mandell
 Ruth Olive Martinelli
 Joanne M. Masci
 Judith Ann Mason
 Paul Alan McCarty
 Janice M. McKeague
 Steven Roy Michelson
 Joseph Earl Miner
 *Nathan Milton Mire
 *Ralph Norman Moberly
 Barbara Ann Moccia
 John James Mooney, Jr.
 Katherine Ann Moreau
 Mary Jane Morrin
 *Susan E. Morrow
 Edward Richard Moss
 Janet Alison Neuhaus
 *Kenneth A. Newman
 Thomas Armas Norris, Jr.
 Harold Marvin Oberg
 Peter J. O'Brien
 James Edward O'Connor
 Jacqueline Jean O'Donnell
 Wendy Ann Oglander
 Donna-Lu O'Hagan
 Lynne Aiko Okuyama
 Julia Oldenburg

Barbara Elizabeth Vicius Palmer
 Gregory Carl Pearson
 Victor Joseph Pedone
 Jackalyne A. Pfannenstiel
 *Richard Laurence Philipps
 Richard Joseph Pietras
 Mathew Walter Placzek, Jr.
 Susan Julia Polleski
 Donald Julian Pollock
 Andrea Barbara Previti
 Arnold Steven Reich
 Joyce Louise Renfroe
 Joanne Ellen Revson
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 *James David Ripley
 Pamela Ann Robinson
 Randall Curtis Robinson
 Cecilia A. Rock
 Donald Arthur Roseberry
 Maryann Rosenthal
 Jo-Ann Teresa Rosol
 Lester Elliot Rozinsky
 Glenda Grayce Salminen
 Richard David Salmonson
 David Scott Salomon
 Ronald Joseph Saunders
 Cynthia Schacht
 John Henry Scrimgeour
 Nathaniel Chase Seale
 Sheryl Seifert
 Robert Haskell Selwitz
 Elaine Marie Seskevich
 Carl Robert Shapiro
 Marc Eric Sharff
 Robin May Shaw
 Adelaide Orie Sherer
 Paul Michael Sherman
 Harlan Myles Sherwin
 Stephen Riley Shirley
 Bruce David Shoicket
 Peter Crosby Shumway
 Betty-Lou M. Silvestri
 Michael Allen Simons
 David Anthony Singer
 *Harvey Michael Slater
 Sherrie Antoinette Smith
 David Edmund Sonn
 Kathryn Sorenti
 *Michael Frank Spaeth
 Peter Laurence Spann
 Walter Harrison Spencer, III
 *Steven Albert Sroka
 Samuel N. Stern
 Marusha Stevens
 Donald Lee Stickle

Lawrence Lederer Stier
Bruce Wayne Stone
Kathryn T. Sullivan
Susan Ruth Swedis
David Flint Swenson
Gene Steven Sykes
Kathryn Mary Szerlag
David Anthony Tebaldi
Sylvia Ann Thamel
Marcus Leon Tilton
Stephen Edward Tobey
Stanley F. Turesky

Cheryl Irene Turner
Florence Rose Vorrn
Geoffrey H. Walker
Katherine N. Walker
Jonathan David Weber
Muriel Ann Weir
Norbert Weissman
Patricia Willard
Frank S. Witkowski
Robert Kenneth Wolff
Bruce Steven Wyman
Howard Marvin Zack

David Jay Zaritt

CANDIDATES FOR THE DEGREE OF BACHELOR OF ARTS WITH HONORS

Departmental Honors

Herbert Gene Aarons, *Geography*
George Howard Abrams, *Government*
Gilda L. Bruckman, *English*
Michael Leonard Dworkin, *Government*
Polly Sawyer Hall, *German*
Donald H. Jackson, Jr., *Government*
Frederick Julian Kaplan, *Economics*
Charles J. L. T. Kovacs, *High Honors, International Relations*
Mary Lou Ramsey, *Highest Honors, Sociology*
William Hutchings Reynolds, Jr., *High Honors, English*
Judy Anne Saggerson, *Sociology*
Gregg E. Whitman, *Sociology*

Cum Laude

Janet Lynne Beck
Henry William Beth
Linda Jane Biadasz
David Norman Bolocofsky
David Michael Cotter, *and with Honors in History*
Anthony Joseph Crone, Jr.
Alan G. Dembner
Henrietta deVeer
William Howard Gitlow, *and with Honors in Government*
Jonathan J. Howe
*Harvey Martin Kaplan
Paul Edward Lundstrom
Patricia Dee Maier
Jerome Samuel Morse, *and with Honors in International Relations*

*As of June 2, 1968

John William Parsons, *and with Honors in Chemistry*
Susan D. Silberberg, *and with High Honors in English*
Diane Lorena de Oliveira e Silva
Paul Lawrence Stanton
Susan Harriet Dunn Starr
Gloria Deanna Trenoweth
JoAnne Marie Smith Van Batenburg, *and with High Honors in Mathematics*
Anthony Richard Venditti
Karen Marie Wagner
Joseph Widoff, *and with High Honors in Government*

Magna Cum Laude

Gale H. Bamberger
Marilyn Louise Demuth, *and with Highest Honors in Music*
Mark Allan Fialk, *and with Honors in Chemistry*
Samuel Kaplan, *and with Highest Honors in Chemistry*
Ronald Howard Levin, *and with High Honors in Chemistry*
Lisbeth J. Mackler
Robert Edward Marshall
Gary Joseph Roberts
Charlotte E. Slopak
Stephen Mark Sprung
Scott Van Batenburg, *and with High Honors in Economics*
Suzanne Zeller

Summa Cum Laude

Cynthia Walker Briggs
Michael A. Overington, *and with High Honors in Sociology*
Vivian Althea Russell

*As of June 2, 1968

CANDIDATES FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

Edward Leon Buck	Walter M. Gasek, Jr.
Carter Lane Cooley, Jr.	Frederick William Kreuzinger
Edward John Foley	Robert Lee Mahar

CANDIDATES FOR THE DEGREE OF MASTER OF ARTS IN EDUCATION

Sandra Gail Betten	Lois Jane Marshak
John Leo Brouillard	Barbara Gail Nowak
Doris Ann Calovi	Amy Wolf O'Leary
Donna Marie DeMarco	Marion Lois Schloss
M. George Green	Stuart Jay Shuman
Louis Raymond LeBel, Jr.	Eileen Jean Snitko
John William Mandell	Helen Lynch Wheeler
	Susan Melita Willoughby

CANDIDATES FOR THE DEGREE OF MASTER OF ARTS
IN TEACHING

Richenda Maria Eberling

Marsha Anne Markle
Gale Hilary Nigrosh

CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

Biology

‡Michael Jan Ackerman
John Stuart Kauer
William James Kennedy
Jinnque Rho

Chemistry

Sung Hye Park-Yim
Marjorie Ann Wilson

Economics

Willem A. Moesen
Laurence Henry Scanlon, Jr.
Paul Schneiderman
Forrest Stephen Trimby
James Andrew Urisko

English

Judith Baird Borger
Dona L. Stein
William Andrew Tremblay
Richard Stephen Walker

Geography

Kang-Tsung Chang
Gordon Alfred Hinzmann, Jr.
Jonathan Alan Leach
Michael Schwartz
David Albert Smith
Charles H. Teller
William Ronald White

**Government and
International Relations**

Ellen Margaret Cranston
Maxine Lipson

History

Sally Barton Fleming
Ihor Yuri Cawdiak
Sidney Algernon Hart
Neil Hugh James McBain
Jean Walden Missud, III
Kenneth James Moynihan

Mathematics

Virginia Ann Chase
Elizabeth Ramsay Clark
Joseph Anthony Tanne

Psychology

Victoria DeFilippo Bowers
Ronald A. Denis
Louis A. Fusaro
John Sheldon Gittins
Andrew Richard Goldman
Wilma Kay Gottlieb
Ronald Gordon Hersch
Richard Melito
Robert David Oakan
Jerry Alan Schlater
Paul Clinton Stern

Sociology

Jerry Edenson
Elsa Baldwin Ekblaw
Leo Alfred Lortie

‡Joint Program with Worcester Polytechnic Institute

CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Biology

J. Rene Paul Tasse

Chemistry

James Andrew Albright

Jane Rumford Carver

Keisuke Morimoto (*Degree awarded May 14, 1969*)

Economics

Frederick Richard Stobel (*Degree awarded April 9, 1969*)

Geography

John Logan Allen

David Lyndle Ames

David Gordon Arey (*Degree awarded February 26, 1969*)

John Carl Lowe

Ranganathan Ramachandran (*Degree awarded January 20, 1969*)

History

Samuel Earl Allen, Jr.

Gerard W. Gawalt

James Merle Miller, Jr. (*Degree awarded January 20, 1969*)

Mathematics

Richard Glee Montgomery (*Degree awarded January 20, 1969*)

Psychology

Frank Curcio

Shannon Theobald Devoe

Seymour Jerome Friedland (*Degree awarded January 20, 1969*)

Charles T. Kenny (*Degree awarded January 20, 1969*)

CONFERRING OF HONORARY DEGREES

JOHN ERNEST BARRIERE

Doctor of Laws

Presented by Morris H. Cohen

LEONA BAUMGARTNER

Doctor of Science

Presented by Gerald N. Grob

ROMAN JAKOBSON

Doctor of Science

Presented by Bernard Kaplan

CLIFFORD KENYON SHIPTON

Doctor of Letters

Presented by George A. Billias

RICHARD PURDY WILBUR

Doctor of Letters

Presented by James F. Beard, Jr.

FIAT LUX

Words by
E. L. Clarke, '09

Music by
R. F. Fletcher, '10

Oh Clark! Thy sons have gathered
To thee from east and west,
To pledge with deep devotion
The college they love best.
They love thy halls and campus,
Each comrade of their heart
The memories, aims, traditions
That make thee what thou art.

Hail Clark! We who revere thee
Salute thee with a cheer!
While we shall live we'll praise thee.
Oh college without peer!
Only with life shall perish
Thy name and memory bright,
Thy sons shall ever cherish
The scarlet and the white!

Godspeed our Alma Mater,
And may she ever be
The leader of the leaders,
The freest of the free!
Her sons shall still press onward,
The foremost in the fight,
Till everywhere her watchword
Shall ring, "Let there be light!"

EVENING COLLEGE

Bachelor of Fine Arts	1
Bachelor of Science in Bus. Admin.	24
Bachelor of Science in General Studies	<u>21</u>
	46

DAY COLLEGE

Bachelor of Science in Bus. Admin.	1
Bachelor of Arts	<u>292</u>
	293

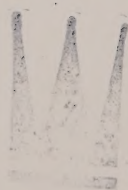
GRADUATE SCHOOL

Master of Business Administration	6
Master of Arts in Education	15
Master of Arts in Teaching	3
Master of Arts	<u>47</u>
	71

Doctor of Philosophy	18
TOTAL OF TOTALS	<u>428</u>

MAJORS - B.A.'s

✓Bio	27 ✓	✓Hist	15
B.A.	1 ✓	✓I.R.	8
✓Chem	14 ✓	✓Math	19
✓Clas	2	✓Mus	1
✓Econ	15	✓Phil	6
Educ	0	✓Phys	3
✓Eng	30	✓Psyc	52
✓F.A.	12	✓R.L.	6
✓Geog	12	✓Soc	<u>30</u>
✓Geol	8		293
✓Ger	4		
✓Govt	28		



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